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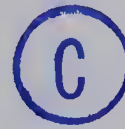


THE UNIVERSITY OF ALBERTA

TOWARD A THEORY OF THE BASE COMPONENT  
OF MALTESE

by

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Toward a Theory of the Base Component of Maltese" submitted by Romano Bonello in partial fulfillment of the requirements for the degree of Master of Arts.

# THEORY OF THE EARTH

BY J. H. VAN DIJK

AND THE LATE DR. J. H. VAN DIJK

TRANSLATED BY J. H. VAN DIJK

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## ABSTRACT

The main aim of the present thesis is to construct the base component of Maltese. The most recent theories concerning the base component of a transformational grammar are examined, and a theoretical framework is conceived within which the structure of the Maltese base component is undertaken. Primary linguistic data are presented in sets of formal properties, and the rules of the base given and justified. The fragment of grammar thus presented is finally evaluated for levels of adequacy.



## ACKNOWLEDGEMENTS

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## TABLE OF CONTENTS

CHAPTER I	THEORIES OF THE BASE	
1.0.	Purpose . . . . .	I-1
1.1.	Concatenative Systems . . . . .	-1
1.1.0.	Chomsky's Concept of the Base . . .	-1
1.1.1.	McCawley's Revision of the Base . .	-5
1.2.	Combinatory Systems . . . . .	-8
1.2.0.	The Applicational Generative Model .	-8
1.2.1.	Luelsdorff's Theory of the Base . .	-10
1.3	The Theoretical Framework . . . . .	-11
CHAPTER II	PRIMARY LINGUISTIC DATA	
2.0.	Purpose . . . . .	II-1
2.1.	The Sentence . . . . .	-1
2.1.0.	The Noun Phrase . . . . .	-3
2.1.0.0.	The Determiner . . . . .	-4
2.1.0.1.	The Personal Pronoun . . . . .	-7
2.1.0.2.	Definiteness . . . . .	-9
2.1.0.3.	Adjectives . . . . .	-10
2.1.1.	The Predicate Phrase . . . . .	-11
2.1.1.0.	The Linking Verb . . . . .	-11
2.1.1.1.	The Nonlinking Verb . . . . .	-12
2.1.1.2.	The Tense System . . . . .	-15
2.1.1.3.	The Negative . . . . .	-18





2.2.	Recursion . . . . .	-19
2.2.0.	Complementation . . . . .	-20
2.2.1.	Conjoining . . . . .	-22
2.3.	Derived Verbs . . . . .	-24
CHAPTER III	RULE PRESENTATION	
3.0.	Purpose . . . . .	III-1
3.1.	Constituent-structure Rules . . .	-1
3.2.	Sample Lexicon . . . . .	-3
3.3.	Illustrations . . . . .	-12
CHAPTER IV	RULE JUSTIFICATION	
4.0.	Purpose . . . . .	IV-1
4.1.	Linear Ordering . . . . .	-2
4.2.	The Constituent-structure Nodes .	-5
4.2.0.	The Linking Verb . . . . .	-6
4.2.1.	Tense . . . . .	-9
4.2.2.	The Noun Phrase . . . . .	-11
4.2.3.	Questions . . . . .	-15
4.2.4.	Complex Sentences . . . . .	-18
4.3.	The Lexicon . . . . .	-22
CHAPTER V	LEVELS OF ADEQUACY AND LINGUISTIC UNIVERSALS	
5.0.	Purpose . . . . .	V-1
5.1.	Levels of Adequacy . . . . .	-1



5.2.	Universals . . . . .	-4
5.2.0.	Nonlinearity . . . . .	-5
5.2.1.	Lexical Dominance . . . . .	-6
5.2.2.	Selectional Features . . . . .	-6
5.2.3.	'Loopfulness' . . . . .	-7
5.2.4.	Conclusion . . . . .	-12
BIBLIOGRAPHY . . . . .		1



## CHAPTER I

### THEORIES OF THE BASE

1.0. Purpose. The purpose of this chapter is to give an outline of recent theoretical proposals concerning the base component of a transformational grammar.

The base is that part of the syntactic component which generates a limited sequence of basic strings for a given sentence. The sequence forms the deep structure of the sentence. The sequence is given its semantic interpretation by the semantic component of the grammar and converted into surface structure by the transformational subcomponent of the syntax. The sequence then becomes the input to the phonological component which assigns it its phonetic representation.<sup>1</sup>

#### 1.1. Concatenative Systems.

1.1.0. Chomsky's Concept of the Base. Chomsky<sup>2</sup> conceives of the base as consisting of two parts: a system of rewrite rules and a lexicon.

---

<sup>1</sup>In this study Maltese morphemes are represented by the morphophonemic spelling of the morpheme in question.

<sup>2</sup>Chomsky (1965: Chapter II) presents two versions of the base. In this study the reference is always to Chomsky's first version (pp. 63-120).



There are four distinct sets of rewrite rules:

a) categorization rules which subdivide a sentence into continuous substrings and assign a string to a category symbol, e.g.

$$S \longrightarrow NP \wedge VP \quad (i)$$

The rule is an instruction to rewrite the non-null category symbol to the left of the arrow as the category symbol(s) to the right, specifying the linear ordering as denoted by the concatenation sign. The category to the right is a non-null string of major category symbols.

b) subcategorization rules which analyze a Complex Symbol into its inherent syntactic features, e.g.

$$N \longrightarrow \langle +N, \text{+Common}, \text{+Animate}, \dots \rangle \quad (ii)$$

which is an instruction to assign to the lexical category on the left-hand side of the arrow the inherent syntactic features specified on the right. Both categorization and subcategorization rules are sequentially ordered and context-free.<sup>3</sup>

c) strict subcategorization rules which analyze a Complex Symbol into its categorial contextual features, e.g.

$$V \longrightarrow \langle + \text{ } (NP) \rangle \quad (iii)$$

---

<sup>3</sup>For definitions of the notions 'sequential ordering', 'context-free', 'context-sensitive', and 'derivation', cf. Chomsky (1965: 66-67).







which asserts that a Verb is either transitive (if followed by an NP) or intransitive (if not followed by an NP).

d) selectional rules which analyze a Complex Symbol in terms of its co-occurrence restrictions, e.g.

$$[+V] \longrightarrow \langle \text{Det}^{\wedge \alpha} \_\_\_ (\text{Det}^{\wedge \alpha}) \rangle \quad (\text{iv})$$

where  $\alpha$  is a Noun being also a variable ranging over specified features. The rule asserts that a Verb occurs after or before an NP if it has the inherent feature specification of its NP Subject and/or NP Object.

Both strict subcategorization and selectional rules are sequentially ordered and context-sensitive.

The lexicon is an unordered set of dictionary entries, each entry being a pair of matrices  $\langle D, C \rangle$ . D is a distinctive feature matrix (i.e. the phonological 'spelling' of a given lexical entry) and C a set of syntactic, semantic, and idiosyncratic features. The syntactic features are those which are introduced by rules of the type (ii), (iii), and (iv) above.

The rewrite rules define a set of derivations whose preterminal strings are labeled sequences of Complex Symbols (Q). Each derivation is the source of a phrase marker (P-marker, which is a labeled, ordered, noded tree). Thus, given the following rewrite rules,



Given # S #

$$1. S \longrightarrow NP \hat{\ } VP$$

$$2. VP \longrightarrow V \hat{\ } NP$$

$$3. NP \longrightarrow (Det) N$$

$$4. Det \longrightarrow Article$$

$$5. N \longrightarrow Q$$

$$6. V \longrightarrow Q \quad (v)$$

where Q is a Complex Symbol, we have the following as one of several possible derivations,

# S #

$$1. NP \hat{\ } VP$$

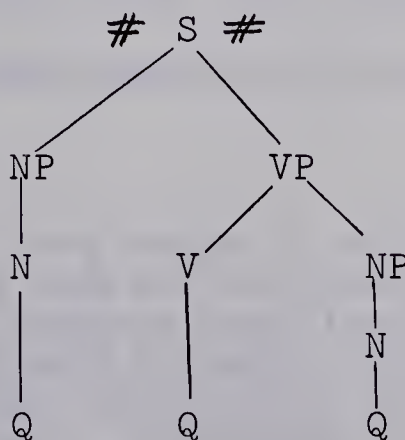
$$2. NP \hat{\ } V \hat{\ } NP$$

$$3. N \hat{\ } V \hat{\ } NP$$

$$4. N \hat{\ } V \hat{\ } N$$

$$5. Q \hat{\ } Q \hat{\ } Q \quad (vi)$$

from which we can construct the following P-marker,



(vii)



A terminal string is obtained by the application of the lexical insertion rule to the preterminal string. The lexical insertion rule, which is part of the metatheory, states:

If Q is a Complex Symbol and DC a lexical entry where C is not distinct from Q, then Q can be replaced by D.

That is, into the Complex Symbol with the specification V and  $[+N [+Animate] \text{ \_\_\_\_\_\_}]$ , one may insert a Verb which is specified in the dictionary as taking an Animate Subject.<sup>4</sup>

1.1.1. McCawley's Revision of the Base. Chomsky's rewrite rules are constrained by a convention which states that a category symbol cannot directly dominate itself. The convention thus excludes rules of the type,

$$NP \longrightarrow \text{and}^{\wedge} NP^n \quad (\text{viii})$$

which Lakoff and Peters<sup>5</sup> maintain must form part of the English base. If, on the other hand, this constraint is lifted, the derivation may have associated non-unique P-markers.<sup>6</sup>

---

<sup>4</sup>If D is inserted at this stage it will have to be carried through the semantic and the transformational components. Since this fails to express any linguistically significant generalization, D should be inserted under identity into C immediately before the application of the rules of the phonological component. (Luelsdorff, Ling. 695, 1968).

<sup>5</sup>Lakoff and Peters (1966: VI-2)

<sup>6</sup>McCawley (1968: 4ff)





McCawley's solution to this problem entails removing the convention, abolishing the intermediate stage of the derivation, and constructing P-markers directly in the rewrite base rules. Two principles which help him do so are 'tree-formation' and 'node-admissibility'. The difference between the two principles is that the former entails sequential ordering, the latter absence of ordering. Since no linguistically significant role is played by sequentially ordered rewrite rules<sup>7</sup>, McCawley considers the node-admissibility condition to be less constrained and therefore more highly valued.

In this system a rewrite rule is of the form,

$$\langle A; BC \rangle \quad (ix)$$

where BC is a non-null string of non-terminal symbols labeled B and C where  $B \neq C$ . The rule asserts that a node in a P-marker is admissible if it bears the label to the left of the semicolon and directly dominates two nodes, one labeled B, the other C, B being to the left of C. This type of rule is context-free and entails linear ordering of B and C.

---

<sup>7</sup>"Note further that in the fragments of grammars which have been written using ordered constituent structure rules, little if any work is done by the ordering. The fragments of constituent structure components given in Chomsky 1957 and Chomsky 1962 yield exactly the same IC-trees as they would if interpreted as unordered rather than as ordered rules." (McCawley, 1968:6). "IC-trees" is McCawley's term for P-markers.





McCawley extends the notion of node-admissibility to strict subcategorization and selection rules, thereby removing the redundancy in Chomsky's base.<sup>8</sup> McCawley treats each lexical entry as a context-sensitive node-admissibility condition, the content-sensibility being expressed by the strict subcategorization and the selectional features. The form of a lexical rule is

$$\langle A; x \text{ in env. } y \rangle \quad (x)$$

in which A is the label of a lexical category, x a complex of phonological<sup>9</sup> and semantic information<sup>10</sup>, and y a complex of strict subcategorization and selectional features. The rule asserts that a node is admissible in an evolving P-marker if it bears the label x, where x is to the right of the semicolon, directly dominated by the node labeled A, and meets the environmental conditions on analyzability y.

In Chomsky's version of the base, the phonological, semantic, and syntactic features are contained in one Complex Symbol; a transformational rule may then apply to one or

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<sup>8</sup>This redundancy is also noted by Matthews (1967: 129). Note that McCawley admits that his proposal, insofar as it concerns the lexicon, is 'virtually identical' with Chomsky's alternative version of the base (Chomsky, 1965: 120-123. McCawley, 1968: 12).

<sup>9</sup>But cf. footnote 4 on I-5.

<sup>10</sup>Exactly what McCawley means by 'semantic information' remains an open question.



other of the syntactic features. In McCawley's proposal, the syntactic features are not part of the Complex Symbol  $x$ ; transformational rules can therefore apply only to the environmental conditions (i.e.  $y$ ). In this way, within McCawley's framework predictions can be made about the nature of human language which cannot be made within Chomsky's -- the prediction, for instance, that once a transformation deletes the NP following a transitive Verb, all subsequent transformations will treat that Verb as they would an intransitive Verb.

Although McCawley's version of the base entails an unordered set of lexical entries, it is obvious that a certain amount of sequential ordering of rules is crucial: no strict subcategorization or selectional restriction can take place unless the selectionally dominant lexical category has been fully specified.

## 1.2. Combinatory Systems.<sup>11</sup>

1.2.0. The Applicational Generative Model (AGM). The versions of the categorial component (that is, the system of base rules exclusive of the subcategorization and the lexicon parts) as presented by Chomsky, McCawley and other transformationalists, can be called 'concatenative'

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<sup>11</sup>For a discussion of combinatory systems and concatenative systems, see Luelsdorff (February, 1968: part I, Chapter I).



since they are based on the assumption that linear ordering is a formal property of deep structure.

Šaumjan<sup>12</sup> and other proponents of the AGM maintain that linear ordering is a phenomenon that belongs to surface structure. They thus present a categorial rule in the form,

$$X \longrightarrow \{Y, Z\} \quad (xi)$$

where X, Y, and Z are categories. Such rules express only a dominance relationship (i.e. that X dominates two nodes labeled Y and Z); linear order is excluded so that  $\{Y, Z\} = \{Z, Y\}$  (in a concatenative rule,  $Y \hat{Z} \neq Z \hat{Y}$ ). Dominance relationships define grammatical functions<sup>13</sup> independently of linear ordering. We can therefore say that in the sentence,

That book I really enjoyed (xii)

'that book' is the Direct Object-of the Verb because it is dominated by VP, in spite of the fact that in surface structure it precedes the transitive Verb.

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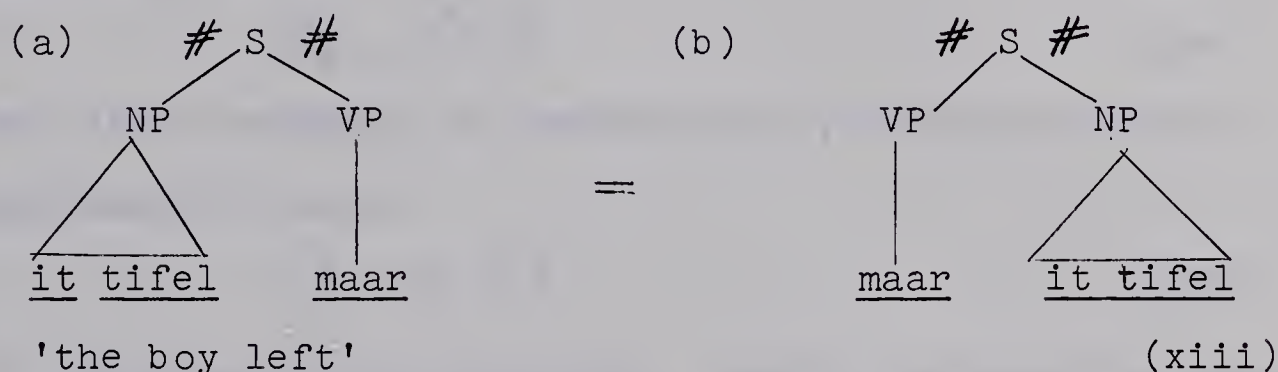
<sup>12</sup>Šaumjan (1965: 189); Luelsdorff (1966: 225-237).

<sup>13</sup>In this study the notion 'grammatical function' is always used in the sense defined by Chomsky (1965: 70ff).

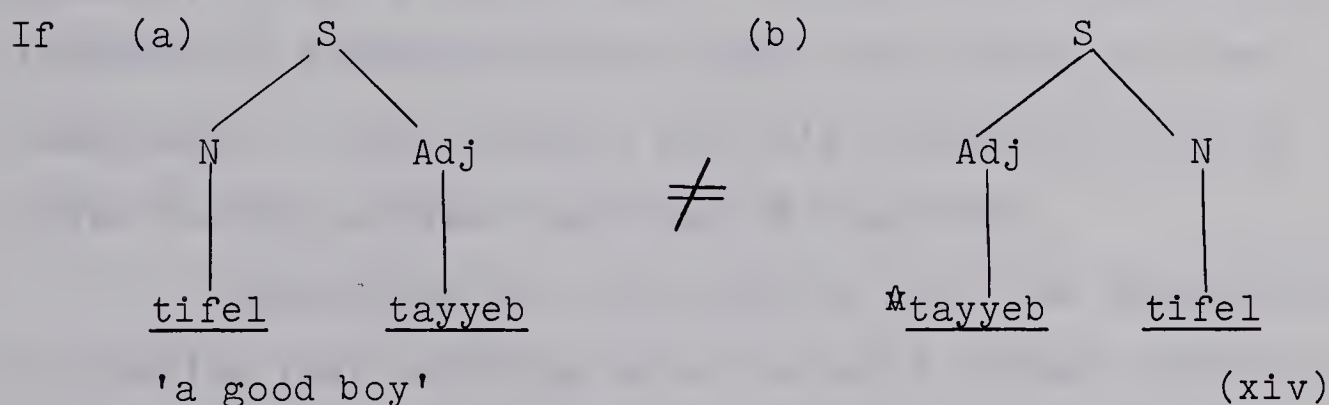




1.2.1. Luelsdorff's Theory of the Base. Luelsdorff<sup>14</sup> accepts Šaumjan's claim that grammatical relationships are defined in terms of dominance but maintains that linear ordering is an essential feature of deep structure only when it is functional. Thus if



then linear ordering is syntactically nonfunctional.



where (b) is ungrammatical, then linear ordering is also nonfunctional since it is predictable. If, however,  $A^{\wedge}B$  and  $B^{\wedge}A$  are two grammatical sentences but with different

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<sup>14</sup>Luelsdorff (Ling. 695, 1968).





grammatical descriptions, then linear ordering is functional.<sup>15</sup>

According to this proposal two types of rules are found in the categorial subcomponent of the base: when linear ordering is functional, the rule is concatenative, e.g.

$$\langle X; A \hat{A} B \rangle \quad (\text{xv})$$

when linear ordering is nonfunctional, the rule is nonconcatenative, e.g.

$$\langle X; A, B \rangle \quad (\text{xvi})$$

1.3. The Theoretical Framework. Having reviewed the most recent concepts of the base component of a transformational grammar, we now present what we consider the most adequate theoretical framework within which this study will be undertaken. Justification for this conception will be given in the relevant sections of the text.

Underlying the structure of the base component is the notion that anything which is not a formal property of the base is to be excluded from the base.<sup>16</sup> The base

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<sup>15</sup>Cf. also 4.1 and 5.2.0.

<sup>16</sup>Cf. 4.1.



consists of a set of constituent-structure rules and a lexicon. The constituent-structure rules are sequentially and linearly unordered.<sup>17</sup> Each rule is context-free and has the form,

$$\langle A; B \rangle \quad (\text{xvii})$$

where A is the label of the dominating node, and B the label of the dominated node. If A is a major category symbol, it may directly dominate an infinite number of major category symbols identical to itself. In other words, the rules allow 'loops' in a P-marker.<sup>18</sup> The rule states that a node is admissible in an evolving P-marker if it bears the label to the left of the semicolon and directly dominates the node(s) to the right of the semicolon bearing the labels given.

In each rule the angular brackets enclose an ordered pair, and a semicolon separates the first co-ordinate from the second co-ordinate. A rule may contain optional elements: these are indicated by parentheses. A rule may also express a logical disjunction: this is

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<sup>17</sup>The question of the place of constituent-ordering rules within this theoretical framework is, as yet, unresolved. It seems clear, however, that constituent-ordering rules should not be either in the base or in the semantic component.

<sup>18</sup>Cf. 5.2.3.



indicated by braces. Thus, a rule of the form,

$$\langle A; B (C) \left( \begin{array}{c} D \\ E \end{array} \right) \rangle \quad (\text{xviii})$$

expresses the following six subrules:

$$\begin{array}{ll} \langle A; B \rangle & (a) \\ \langle A; B, C \rangle & (b) \\ \langle A; B, D \rangle & (c) \\ \langle A; B, E \rangle & (d) \\ \langle A; B, C, D \rangle & (e) \\ \langle A; B, C, E \rangle & (f) \end{array}$$

Symbols to the right of the semicolon are separated by commas, unless they are already separated by parentheses and/or braces as in (xviii). P-markers are constructed directly from constituent-structure rules so that the intermediate stage of the derivation is bypassed.

The lexicon consists of lexical entries which are sequentially ordered only to the extent that the lexically dominant category is subcategorized before the lexically nondominant categories.<sup>19</sup> In this study, the lexically

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<sup>19</sup>Cf. 5.2.1.





dominant category is N.<sup>20</sup>

A lexical entry has the form,

$$\langle X; \langle DC \rangle \rangle \quad (\text{xix})$$

where X is the lexical category, D the phonological 'spelling', and C a complex of inherent syntactic features in the case of the lexically dominant category, and a complex of selectional, inherent, and idiosyncratic features in the case of the lexically nondominant category. Note that the strict subcategorization features are omitted on the grounds that they are predictable on the basis of the selectional features.<sup>21</sup>

Each lexical entry is at the same time a node admissibility condition. The condition is that the node to the left of the semicolon is admitted in an evolving P-marker if it dominates the Complex Symbol  $\langle DC \rangle$ , and, in the case of a lexically nondominant category, if the complex of information specified in C corresponds to that of the lexically dominant category.

As an example, consider the following P-marker:

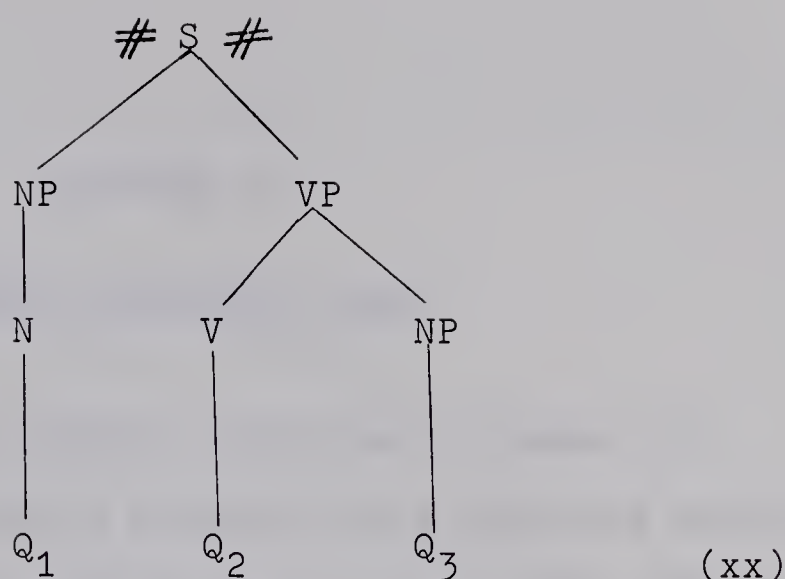
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<sup>20</sup>For justification, cf. Chomsky (1965: 114-115). The term 'lexically dominant category' refers to a lexical category whose feature composition is derived without the use of context-sensitive rules. The term 'lexically non-dominant category' refers to a lexical category whose feature composition is derived from the lexically dominant category.

<sup>21</sup>Cf. 5.2.2.







$Q_1$  is dominated by NP which is directly dominated by S; NP is therefore the Subject-of S.  $Q_3$  is dominated by NP which is directly dominated by VP; NP is therefore the Object-of VP. Suppose that  $Q_1$  is represented in the lexicon by the phonological 'spelling' mikiel and that one of its inherent syntactic features is  $[+Hum]$ ; and that  $Q_3$  is represented by the phonological 'spelling' tifla and that one of its inherent syntactic features is  $[+Hum]$ . Suppose, furthermore, that  $Q_2$  has the phonological 'spelling' habb, and that two of its selectional features are  $[[+Hum] \text{ Subject of}]$  and  $[[+Hum] \text{ Object of}]$ : then  $Q_2$  can be replaced by habb. In surface structure the sentence will have the shape:

mikiel habb tifla

'Michael loved a girl'

(xxi)



## CHAPTER II

### PRIMARY LINGUISTIC DATA

2.0. Purpose. This chapter specifies a number of formal properties which a descriptively adequate theory of the Maltese base component must account for. The properties are given in sets, and each set is followed by several illustrative examples. In all instances, the description refers to the surface structure of utterances.

2.1. The Sentence. The major constituents of the Maltese Sentence (S) are the Noun Phrase (NP) and the Predicate-Phrase (Pred-Phrase). The NP and the Pred-Phrase are unordered, that is,  $\langle \text{NP}, \text{Pred-Phrase} \rangle = \langle \text{Pred-Phrase}, \text{NP} \rangle$  :

it tifla deyyem tilaab

'the girl always plays'

deyyem tilaab it tifla

The following are ungrammatical:

\*deyyem it tifla tilaab

\*tilaab it tifla deyyem

\*it tilaab tifla deyyem

When it is not a statement, S is either a question (Q) or imperative (Imp). Q is either intonational or wh.



An intonational question has the same word-order of a statement, the distinguishing mark of the question being a rising pitch at the end:

anna šstraat ktieb

'Anna bought a book'

anna šstraat ktieb ↗

'Did Anna buy a book?'

A wh-question has the same intonation of a statement, the distinguishing mark of the question being a wh-formative. The wh-formative is phonetically realized as one of the following morphemes: miin 'who', ši 'what', feyn 'where', meta 'when', kiif 'how', etc.:

miin maar

'who left?'

ši triid

'what do you want?'

feyn maar

'where did he go?'

meta maar

'when did he go?'

kiif maar

'how did he go?'





S is imperative (Imp) if the NP Subject is Second Person Singular or Plural, and the verbal prefix is deleted.

anna tilaab

'Anna plays.'

anna int ilaab → ilaab

'Anna, you play.' 'play'

tfaal intom ilaabu → ilaabu

'Children, you play.' 'play'

2.1.0. The Noun Phrase. The NP contains at least one Noun. Nouns are either Common or Proper. Common Nouns are either Singular or nonSingular; nonSingular may be either Dual or nonDual; nonDual may be either Determinate or nonDeterminate<sup>1</sup>:

yuum sabieh

'a beautiful day'

yuumeyn sbieh

[+Dual]

'two beautiful days'

tlett iyiem sbieh

[+Determinate]

'three beautiful days'

---

<sup>1</sup>For the purpose of Subject-Verb or Noun-Adjective agreement, the subcategorization of the nonDual (i.e. the Plural) is syntactically insignificant.



hafna lyiem sbieh [-Determinate]

'many beautiful days'

tifla sabieha

'a beautiful girl'

zewj tibniet sbieh

'two beautiful girls'

tlett tibniet sbieh

'three beautiful girls'

hafna bniet sbieh

'many beautiful girls'

but not,

\*tiflaeyn sbieh

\*zewj tiyiem sbieh

\*hafna iyiem sabieh

2.1.0.0. The Determiner. A Common Noun may be preceded by a Determiner. The Determiner consists of an Article which may be preceded by a Demonstrative and followed by a Quantifier. The Quantifier is either a Numeral or a nonNumeral:

diik it tifla tilaab

'that girl plays'

dawk it tlett titfaal yilaabu

'those three children play'



dawk il hafna tfaal yilaabu

'those many children play'

but not,

\*diik tifla tilaab<sup>2</sup>

\*tifla diik tilaab

\*it tifla diik tilaab

\*hafna dawk tfaal yilaabu

\*il hafna dawk tfaal yilaabu

\*hafna il dawk tfaal yilaabu

\*dawk hafna tfaal yilaabu<sup>2</sup>

The Quantifier may precede the Article or the Demonstrative and the Article; when it does, the Preposition minn must follow the Quantifier:

hafna minn dawk it tfaal yilaabu

'many of those children play'

tlieta minn dawk it tfaal yilaabu

'three of those children play'

but not,

\*hafna dawk it tfaal yilaabu

\*tlett dawk it tfaal yilaabu

---

<sup>2</sup>But cf. 2.1.1.0.



The Article is either overt<sup>3</sup> or covert. Only when the Article is overt can it be preceded by the Demonstrative or Quantifier.

tifla

'a girl'

\*diik tifla<sup>4</sup>

Unlike the Article and the Quantifier, the Demonstrative agrees with the singular Noun in Gender, and with the plural Noun in Number. All Nouns are either Masculine or Feminine.

diin il mara

'this woman'

diin il ʔebla

'this rock'

daan ir raʔel

'this man'

daan il ktieb

'this book'

dawn il ʔebel

'these rocks'

---

<sup>3</sup>The overt Article is l; it assimilates to the following dental or palatal and takes i in initial position when it occurs between two consonants or sentence-initially.

<sup>4</sup>Cf. 2.1.1.0.





dawn il kotba

'these books'

but not,

\*daan il mara

\*diin ir raɣel

\*dawn il ɣebbla

\*dawk il ktieb

2.1.0.1. The Personal Pronoun. The Personal Pronoun is a free morpheme when it is directly dominated by S, and a bound morpheme when it is dominated by the NP or the VP. When the NP or the VP dominates a Preposition, the Pronoun is bound to the Preposition. The Pronoun is either Singular or Plural, Third or nonThird. When it is Third and Singular, the Pronoun is either Masculine or Feminine. There is no distinction in Gender when the Pronoun is Third and Plural. When it is nonThird, the Pronoun is either First or non-First without any distinction in Gender:

yien ɣeyt

'I came'

ahna ɣeyna

'we came'

int ɣeyt

'you came' (Singular)

intom ɣeytu

'you came' (Plural)

uu ɣie

'he came'

ii ɣiet

'she came'

uuma ɣew

'they came'



daar 'house'

daari

'my house'

daarna

'our house'

daarek

'your house' (Singular)

daarkom

'your house' (Plural)

daaru

'his house'

daarom

daara

'her house'

'their house'

it tifla thobbni

'the girl loves me'

it tifla thobbok

'the girl loves you' (Singular)

it tifla thobbu

'the girl loves him'

it tifel ihobba

'the boy loves her'

hafna minna

'many of us'

hafna minnkom

'many of you' (Plural)

hafna minnom

'many of them'



but not,

\*jie u

\*u daar

\*it tifla u thobb

\*hafna minnu

2.1.0.2. Definiteness. A Noun is Definite if it is Proper or a free Personal Pronoun. A Common Noun is Definite when it is preceded by the overt Article or when it is genitive. The genitive construction is either nominal or pronominal:

wičč il mara

'face the woman' (=the woman's face)

wičč mara

'a woman's face'

wičč anna

'Anna's face'

wičča

'her face'

but not,

\*il wičč mara

\*il wičč il mara

\*il wičč anna

\*il wičča

If an Article and a Noun precede a Quantifier<sup>^</sup> minn or a Noun, a bound Pronoun agreeing in Number,





Person, and Gender with the first Noun, is suffixed to the Preposition or the second Noun:

hafna mit tfaal tel?u<sup>5</sup> —→ it tfaal hafna minnom tel?u  
 'many of the children left' 'the children, many of them left'  
wičč il mara sabieh —→ il mara wičča sabieh  
 'the woman's face is beautiful' 'the woman, her face is  
 beautiful'

2.1.0.3. Adjectives. A Common Noun may be modified by an Adjective following it. The Adjective agrees with the singular Noun in Gender and with the plural Noun in Number. If the Noun is Definite the overt Article is inserted before the Noun and again before the Adjective:

it tifla l ?asiira

'the short girl'

it tifel il ?asiir

'the short boy'

il bniet il ?osra

'the short girls'

is subien il ?osra

'the short boys'

---

<sup>5</sup>mit is Preposition minn assimilated to it (which is the overt Article l assimilated to a dental and preceded by i).



If the Noun is nonDefinite, no Article is inserted:

tifel ?asiir

'a short boy'

but not,

\*it tifla ?asiira (see 2.1.1.0.)

\*it tifla l ?asiir

\*il bniet il ?asiira

2.1.1. The Predicate Phrase. The Pred-Phrase consists of at least one Verb. The Verb may be linking or nonlinking.

2.1.1.0. The Linking Verb. The Linking Verb is kien 'be'. It links the NP Subject with a Substantive or a locative Adverbial. The NP Subject is always Definite. The Substantive is either an NP or an Adjective. The Adjective agrees with the singular NP Subject in Gender and with the plural NP Subject in Number. The Adverbial may be a Prepositional Phrase. In the Present Tense the linking Verb is covert:

it tifla twiila

'the girl is tall'

it tifel twiil

'the boy is tall'

it tfaal twaal

'the children are tall'



daan tifel

'this is a boy'

it tifel awn

'the boy is here'

l ilma fil biir

'the water is in the well'

The linking Verb is overt in the Past Tense or when preceded by a verbal Particle (e.g. ser, ha, ?ed, etc.):

it tifla kienet awn

'the girl was here'

it tifla ser tkun awn

'the girl is going to be here'

but not,

\*it tifel it twiil

\*daan it tifel

\*ilma fil biir

\*it tifla ser awn

2.1.1.1. The nonlinking Verb. All Verbs, except kien, are nonlinking. A nonlinking Verb is either Transitive or non-Transitive. If the Verb is nonTransitive it is optionally accompanied by a Locative, or a Time Adverbial or a Manner Adverbial or any combination of them. The linear ordering



of the Adverbials is nonfunctional.

it tifla tilaab fil bitha

'the girl plays in the yard'

it tifla tilaab fil bitha kulyuum

'the girl plays in the yard everyday'

it tifla tilaab bilmod fil bitha kulyuum

'the girl plays quietly in the yard everyday'

it tifla tilaab bilmod kulyuum fil bitha

it tifla tilaab kulyuum bilmod fil bitha

it tifla tilaab kulyuum fil bitha bilmod

it tifla tilaab fil bitha kulyuum bilmod

it tifla tilaab fil bitha bilmod kulyuum

but not,

\*it tifla bilmod tilaab fil bitha kulyuum

\*it tifla bilmod fil bitha tilaab kulyuum

\*it tifla bilmod fil bitha kulyuum tilaab

\*bil mod it tifla tilaab fil bitha kulyuum

Transitive Verbs are of two types: those which take only one Object which is always Direct; and those which can take two Objects, one Direct, the other non-Direct. The Preposition lil 'to' occurs in a construction containing the first type of Verb if it is followed by an NP Object which is Definite and Specific. It always





occurs in a construction containing the second type of Verb between the NP Direct Object and the NP nonDirect Object. Ordering is further discussed below:

it tifel ihobb tifla

'the boy loves a girl'

it tifel ihobb lit tifla<sup>6</sup>

'the boy loves the girl'

it tifel ihobb lila

'the boy loves her'

it tifel ihobba

'the boy loves her'

it tifel baat il ktieb lit tifla

'the boy sent the book to the girl'

If the Direct or nonDirect Noun Object is specified [-Pron], it follows the Direct or nonDirect Noun Object specified [+Pron] :

it tifel baatila ktieb<sup>7</sup>

'the boy sent her a book'

it tifel baatu lil anna

'the boy sent it to Anna'

---

<sup>6</sup>lit is Preposition lil assimilated to the Article it.

<sup>7</sup>When bound to a Verb lil becomes il or l.



A Noun Object, Direct or nonDirect, preceded by lil, may occur sentence-initially or immediately after the NP Subject. A bound Pronoun, agreeing with the NP Object in Gender or Number, is suffixed to the Verb in the case of the Direct Object:

<u>Yanni</u> <u>ihobb</u> <u>lil</u> <u>anna</u>	→	{	<u>lil</u> <u>anna</u> <u>Yanni</u> <u>ihobba</u>
'John loves Anna'			<u>Yanni</u> <u>lil</u> <u>anna</u> <u>yhobba</u>

or to the Preposition lil which is then suffixed to the Verb:

<u>Yanni</u> <u>baat</u> <u>ktieb</u> <u>lil</u> <u>anna</u>	→	{	<u>lil</u> <u>anna</u> <u>Yanni</u> <u>baatila</u> <u>ktieb</u>
'John sent a book to Anna'			<u>Yanni</u> <u>lil</u> <u>anna</u> <u>baatila</u> <u>ktieb</u>

but not,

\*it tifel baat anna u

\*tifla ihobb it tifel

\*lit tifla it tifel ihobb

\*il ktieb it tifel lit tifla baat

\*lit tifla it tifel baat ktieb

2.1.1.2. The Tense System. A Verb consists of a verb-base and affixes. The affixes are either prefixes, in which case they denote Present Tense, or suffixes, in which case they denote Past Tense. An affix agrees with the NP Subject in Person and Number, and in the Third Person



singular in Gender. There is no affix for the Third Person Masculine, Singular, Past Tense. Plurality is indicated by the morpheme u suffixed to the singular verb-forms.

yien nilaab/laabt

'I play/played'

ahna nilaabu/laabna<sup>8</sup>

'we play/played'

int tilaab/laabt

'you play/played' (Singular)

intom tilaabu/laabtu

'you play/played' (Plural)

ii tilaab/laabet

'she plays/played'

uu yilaab/laab

'he plays/played'

uuma yilaabu/laabu

'they play/played'

but not,

\*ii yilaab/laab

\*uu tilaab/laabet

\*uuma yilaab/laab

\*ahna nilaab/laabu

---

<sup>8</sup>The underlying form is postulated as laab which a phonological rule will convert into laabna.





Since the affix has the triple function of indicating Person, Gender in the Third Person Singular, and Tense by position, the NP Subject may be deleted:

Yanni yilaab → yilaab  
 'John plays'     \*'plays'

The same set of affixes is taken by the linking Verb kien. This Verb also functions as an Auxiliary (Aux) with the prefixes expressing Aspect and Modality, and the suffixes expressing Aspect. The Aux and the main verb must agree in Gender and Number.

tkun tilaab  
 'she will be playing'

kienet tilaab  
 'she was playing'

tkun laabet  
 'she will have played'

kienet laabet  
 'she had played'

but not,

\*tkun yilaab

\*kien tilaab

\*tkun laab

\*kien laabet

\*kien laabet

\*kienet laabu



S is C (i.e. conditional) when it is either Q or nonQ (i.e. a statement). S is never C when it is Imp. C is expressed by the invariable kieku preceding the VP either directly or with the NP Subject intervening.

kieku anna tkun tilaab

'Anna would be playing'

kieku anna kienet tilaab

'Anna would have been playing'

anna kieku tkun laabet

'Anna would have played'

anna kieku kienet laabet

'Anna would already have played'

but not,

\*kieku ilaab

\*anna tkun tilaab kieku

\*anna kienet kieku tilaab

2.1.1.3. The Negative. S is negated by the discontinuous morpheme ma Ŷ, the first part of which precedes the Verb and the second is suffixed to it:

anna ma tilaab Ŷ

'Anna does not play'

When the linking Verb is covert the discontinuous morpheme negates the free Personal Pronoun which agrees with the NP Subject in Person, Gender and Number.



Yanni muuš yilaab

'John is not playing'

anna miiš tilaab

'Anna is not playing'

intom mintomš twaal

'you are not tall'

but not,

\*Yanni miiš yilaab

\*anna muuš tilaab

\*intom muuš tilaabu

2.2. Recursion. A relative clause is introduced in the NP by the invariable particle li. The antecedent must be Definite:

it tifel li kien twiil . . .

'the boy who was tall . . .'

it tifla li kienet awn . . .

'the girl who was here . . .'

il jebila li kienet t?iila . . .

'the rock which was heavy . . .'

it tfaal li int rayt . . .

'the children whom you saw . . .'



but not,

\*tifel li kien twiil. . .

\*it tifla kienet awn . . .

\*it tifla kienet li awn . . .

2.2.0. Complementation. The invariable particle li is inserted before the NP Subject or the NP Object. The NP Subject or the NP Object must be Definite and nonAnimate:

l ideya li d dinya kwadra . . .

'The idea that the world is square . . .'

ahna naarfu l fatt li d dinya tonda

'we recognize the fact that the world is round'

but not,

\*ideya li d dinya kwadra . . .

\*tifla li l fatt ma yietš . . .

A Transitive VP-complement does not take the particle li. The Verb of the constituent sentence is always in the Present Tense whatever the Tense of the matrix Verb. The constituent Verb agrees in Person, Gender and Number with the NP Object of the matrix Verb:

irriida tiyi

'I want her to come'

ridt lil anna tiyi

'I wanted Anna to come'





but not,

\*irriida ĵiet

\*irriida yiĵi

\*ridt lil ĵanni tiĵi

A nonTransitive Verb denoting Motion may be followed by one or two Verbs which seem to be adverbial in function. The second Verb denotes Manner, the third Verb denotes Purpose. The first Verb may take any verbal affix; the Manner and the Purpose Verbs must take the verbal prefix. All three Verbs must agree in Person, Number and Gender:

toхроĵ tiĵri tištri ktieb

'she goes out she runs she buys a book' (=she goes out running to buy a book)

harĵet tiĵri tištri ktieb

'she went out she runs she buys a book' (=she went out running to buy a book)

but not,

\*toхроĵ yiĵri yištri ktieb

\*harĵet ĵriĵet šstraat ktieb

\*tiĵri toхроĵ tištri ktieb

\*tištri tiĵri toхроĵ ktieb



2.2.1. Conjoining. Two or more S's, NP's, VP's, etc. may be conjoined by the co-ordinator u 'and', imma, 'but', etc.

anna tilaab imma mikiel yikteb

'Anna plays but Michael writes'

If the S's have identical NP Subjects and the co-ordinator is u, the second NP Subject may be pronominalized:

anna tilaab u anna tidha? —→ anna tilaab u ii tidha?

'Anna plays and Anna laughs' 'Anna plays and she laughs'

The Pronoun may then be deleted:

anna tilaab u tidha?

'Anna plays and laughs'

Two or more NP Subjects are conjoined by the co-ordinator u. The co-ordinator occurs only once, and always before the last NP Subject:

mikiel u anna yilaabu

'Michael and Anna play'

mikiel anna u Yanni yilaabu

'Michael, Anna and John play'

Two or more NP Objects are conjoined by the co-ordinator u, which occurs before the last NP Object. If the NP Objects are Definite and Specific, the Preposition lil occurs obligatorily before each NP Object:



yien rayt lil janni u lil anna

'I saw John and Anna'

yien rayt lil janni lil anna u lil mikiel

'I saw John, Anna and Michael'

If the Verb is specified nonDirect, u occurs before the last NP Direct Object and before the last NP nonDirect Object. The Preposition lil occurs only before each NP nonDirect Object:

yien tayt ktieb pinna u kašša lil anna lil mikiel u

'I gave a book, a pen, and a box to Anna, Michael and

lil janni

John'

yien tayt il ktieb il pinna u l kašša lil tifel u

'I gave the book, the pen, and the box to a boy and

lil tifla

a girl'

but not,

\*mikiel yidha? anna tilaab

\*yien rayt janni u anna

\*yien rayt lil janni anna u mikiel

\*yien tayt lil ktieb lil pinna u lil kašša lil  
anna u lil mikiel





2.3. Derived Verbs. Certain Verbs are derived from Transitive Verbs. In surface structure the same Verb denotes passiveness or reciprocity depending on the type of the Prepositional Phrase that follows it, or reflexiveness or intensification or both if it is not followed by a Prepositional Phrase:

it tifel bies lit tifla

'the boy kissed the girl'

where bies is the source Verb;

it tifel tbewwes mit tifla

'the boy was kissed by the girl'

it tifel tbewwes mat tifla<sup>9</sup>

'the boy kissed the girl and was kissed by her'

it tifel tbewwes

'the boy kissed himself'

in the sense that the boy did some furious kissing during which he kissed everybody in sight including himself.

But not,

\*it tifel bies mat tifla

\*it tifel bies

\*it tifel tbewwes lit tifla

---

<sup>9</sup>mat is Preposition ma assimilated to the Article it.



## CHAPTER III

### RULE PRESENTATION

3.0. Purpose. In this chapter we present the rules and the lexicon of the base component of Maltese. The rules form an unordered set of context-free constituent-structure rules, and the lexicon an ordered set of lexical entries, each lexical entry, except those for N, being at the same time a context-sensitive lexical rule.

3.1. Constituent-structure Rules. As already noted in Chapter I, each pair of angular brackets encloses an ordered pair. The first co-ordinate is separated from the second co-ordinate by a semicolon. Symbols on either side of the semicolon represent grammatical categories. Commas separate symbols to the right of the semicolon. Parentheses denote optional elements, and braces a logical disjunction. Symbols to the left and to the right of the semicolon are non-null.

The rules are sequentially and linearly unordered. The numbering convention is therefore a reference convenience without any theoretical significance.



Given # S #

$$\left\langle S; NP, \text{Pred-Phrase} \left( \left\{ \begin{array}{l} (Q) \quad (C) \\ \text{Imp} \end{array} \right\} \right) \right\rangle \quad (\text{R } 1)$$

$$\left\langle \text{Pred-Phrase}; VP \text{ (Aux) (Valuator)} \right\rangle \quad (\text{R } 2)$$

$$\left\langle \text{Aux}; \text{Tns}, \underline{\text{kien}} \text{ (Particle)} \right\rangle \quad (\text{R } 3)^1$$

$$\left\langle VP; \text{Tns}, V \left( \left\{ \begin{array}{l} (NP) \quad (S) \\ \text{Adj} \\ \text{Adv (V)} \end{array} \right\} \right) \right\rangle \quad (\text{R } 4)$$

$$\left\langle \text{Tns}; \left\{ \begin{array}{l} (\text{Modal}) \text{ Pres} \\ \text{Past} \end{array} \right\} \right\rangle \quad (\text{R } 5)$$

$$\left\langle \text{Adv}; \quad (V) \text{ (PP)} \right\rangle \quad (\text{R } 6)^2$$

$$\left\langle NP; \quad (\text{Det}) N \left( \left\{ \begin{array}{l} \text{Poss} \\ S \end{array} \right\} \right) \right\rangle \quad (\text{R } 7)$$

---

<sup>1</sup>The underlined morpheme represents a grammatical formative and not its phonological 'spelling'.

<sup>2</sup>Since no symbol to the left of the semicolon can dominate a null symbol, R 6 states that at least one symbol to the right of the semicolon must be chosen. (For a similar convention cf. Koutsoudas, 1966: 11).





$$\langle \text{Det; Art} \left( \left\{ \begin{array}{l} (\text{Dem}) \quad (\text{Quantifier}) \\ \text{wh} \end{array} \right\} \right) \rangle \quad (\text{R } 8)$$

$$\langle \text{Poss; NP} \rangle \quad (\text{R } 9)$$

$$\langle \text{PP; Prep, NP} \rangle \quad (\text{R } 10)$$

3.2. Sample Lexicon. The following sample lexicon contains all the members of closed systems (for instance, all the members of the pronominal system) but only representative samples of open sets (for instance, boy, girl, etc.)<sup>3</sup> as indicated by the rows of dots below the samples.

Each lexical entry has the following, partially expanded, form,

$$\begin{array}{l} \langle X; \quad \quad \quad F_1 \cdot \cdot \cdot F_n \rangle \rangle \\ \quad \langle D [F_a, F_b \cdot \cdot \cdot \end{array}$$

X is the lexical category which is entered first to the left of the semicolon. The Complex Symbol is analyzed to the right of the semicolon into features common to all the entries for the given lexical category, that is,  $F_1 \cdot \cdot \cdot F_n$ . A space separates the lexical category from the common features. Each subsequent entry is further sub-

---

<sup>3</sup>For the grammatical notions 'closed systems' and 'open sets', cf. Halliday et al (1964:22).





categorized into its phonological 'spelling'<sup>4</sup>, that is, D, and its own particular features, that is,  $[F_a, F_b \dots]$ , so that  $[F_a, F_b \dots F_1 \dots F_n]$  form C which is a vector of nonphonological features. The outer angular brackets enclose the whole lexical entry; the inner angular brackets enclose the Complex Symbol  $\langle DC \rangle$ .

Each enclosure within the inner angular brackets, that is,  $\langle D [F_a, F_b \dots]$ , is to be interpreted as filling the space between the semicolon and the common features.

Square brackets enclose and separate the nonphonological and the nonsemantic bundles of features. The bundles are given in the following order<sup>5</sup>: inherent syntactic features (for only the lexically dominant category), selectional features, and idiosyncratic features (if any).

$\langle$  N; -Pron, +Com,  $\underline{+Def}$   $\rangle\rangle$   
 $\langle$   $\underline{tifel}$   $[+Hum, -Fem, \underline{+Sg},$   
'boy'  
 $\langle$   $\underline{tifla}$   $[+Hum, +Fem, \underline{+Sg},$   
'girl'

---

<sup>4</sup>The phonological 'spelling' of the lexical item in question is represented by the underlined morphemes in the lexical entries.

<sup>5</sup>The order has no theoretical significance.



$\left\langle \begin{array}{l} \underline{\text{ziemel}} \quad [-\text{Hum}, -\text{Fem}, +\text{Sg}, \\ \text{'horse'} \end{array} \right.$

$\left\langle \begin{array}{l} \underline{\text{ba??ra}} \quad [-\text{Hum}, +\text{Fem}, +\text{Sg}, \\ \text{'cow'} \end{array} \right.$

$\left\langle \begin{array}{l} \underline{\text{hadd}}^6 \quad [+An, -\text{Spec}, +\text{Sg}, \\ \text{'body'} \end{array} \right.$

$\left\langle \begin{array}{l} \underline{\text{haj}\text{a}} \quad [-An, -\text{Spec}, +\text{Sg}, \\ \text{'thing'} \end{array} \right.$

$\left\langle \begin{array}{l} \underline{\text{ilma}} \quad [-An, -\text{Count}, -\text{Fem}, +\text{Sg}, \\ \text{'water'} \end{array} \right.$

$\left\langle \begin{array}{l} \underline{\text{Yeb}\text{la}} \quad [-An, +\text{Count}, +\text{Fem}, +\text{Sg}, \\ \text{'rock'} \end{array} \right.$

$\left\langle \begin{array}{l} \underline{\text{fatt}} \quad [+Abst, -\text{Fem}, +\text{NP complement}, \\ \text{'fact'} \end{array} \right.$

.....

.....

$\left\langle \begin{array}{l} \underline{\text{id}} \quad [-An, -Abst, +\text{Fem}, \left\{ \begin{array}{l} +\text{Sg} \\ +\text{Dual} \end{array} \right\} , \\ \text{'hand'} \end{array} \right.$

$\left\langle \begin{array}{l} \underline{\text{sena}} \quad [-An, +Abst, +\text{Fem}, \left\{ \begin{array}{l} +\text{Sg} \\ +\text{Dual} \end{array} \right\} , \\ \text{'year'} \end{array} \right.$

.....

.....

---

<sup>6</sup>In the sense of nobody, somebody, etc.



< bitha [+Place, +Fem, +Sg, [+Preposition],  
 'yard'

< aġġla [+Manner, +Fem, +Sg, [+Preposition],  
 'hurry'

< oodu [+Time, -Fem, +Sg, [+Preposition],  
 'morning'

.....

.....

< N; -Pron, -Com] >>

< mikiel [+Hum, -Fem, +Sg,  
 'Michael'

< anna [+Hum, +Fem, +Sg,  
 'Anna'

< fiido [-Hum, -Fem, +Sg,  
 'Fido'

< biida [-Hum, +Fem, +Sg,  
 'Bida'

< malta [-An, +Fem, +Sg  
 'Malta'

< israel [-An, -Fem, +Sg,  
 'Israel'





$\left\langle \begin{array}{l} \text{lalpi} \\ \text{'The Alps'} \end{array} \right. \left[ \begin{array}{l} -\text{An}, -\text{Sg}, \end{array} \right.$

.....

.....

$\left\langle \text{N}; \right.$

$\left. \begin{array}{l} +\text{Pron} \end{array} \right] \gg$

$\left\langle \begin{array}{l} \text{yien} \\ \text{'I'} \end{array} \right. \left[ \begin{array}{l} +\text{lp}, +\text{Sg}, \end{array} \right.$

$\left\langle \begin{array}{l} \text{ahna} \\ \text{'we'} \end{array} \right. \left[ \begin{array}{l} +\text{lp}, -\text{Sg} \end{array} \right.$

$\left\langle \begin{array}{l} \text{int} \\ \text{'you'} \end{array} \right. \left[ \begin{array}{l} -\text{lp}, +\text{Sg}, \end{array} \right.$

$\left\langle \begin{array}{l} \text{intom} \\ \text{'you'} \end{array} \right. \left[ \begin{array}{l} -\text{lp}, -\text{Sg}, \end{array} \right.$

$\left\langle \begin{array}{l} \text{uu} \\ \text{'he'} \end{array} \right. \left[ \begin{array}{l} +3\text{p}, -\text{Fem}, +\text{Sg}, \end{array} \right.$

$\left\langle \begin{array}{l} \text{ii} \\ \text{'she'} \end{array} \right. \left[ \begin{array}{l} +3\text{p}, +\text{Fem}, +\text{Sg} \end{array} \right.$

$\left\langle \begin{array}{l} \text{uuma} \\ \text{'they'} \end{array} \right. \left[ \begin{array}{l} +3\text{p}, -\text{Sg} \end{array} \right.$

$\left\langle \text{Art}; \right.$

$\left[ \begin{array}{l} +\text{N} \end{array} \right.$

$\left. \begin{array}{l} +\text{Com} \end{array} \right] \gg$

$\left\langle \begin{array}{l} \text{1} \\ \text{'the'} \end{array} \right. \left[ \begin{array}{l} +\text{Def}, \end{array} \right.$



< ši [-Spec, +Sg,  
 'some']

< Dem; [+N +Com, +Def] >>

< daan, daak [-Fem, +Sg,  
 'this', 'that']

< diin, diik [+Fem, +Sg,  
 'this', 'that']

< dawn, dawk [-Sg,  
 'these', 'those']

< Quantifier; [+N +Com] >>

< hafna [-Determinate,  
 'many']

< tlieta [+Determinate,  
 'three']

. . . . .

. . . . .

< Adj; [NP Subject],

< twiil [-Fem, +Sg] >>

< twiila [+Fem, +Sg] >>

< twaal [-Sg] >>

'tall'

. . . . .

. . . . .



<Valuator; <deyyem [+Positive]>>  
 'always'

o o o o o o o o

o o o o o o o o

<ma š [-Positive]>>  
 'not'

o o o o o o o o

o o o o o o o o

<V;

<kien [NP Subject, +Def], {NP [-Def]  
 Locative  
 Adj}>>  
 'be'

<maar <[+An Subject of], [+Motion,] . . .>>  
 'go'

<jera<sup>7</sup> <[+An Subject of], [+Motion,] [+Manner], . . .>>  
 'run'

o o o o o o o o

o o o o o o o o

<štara<sup>7</sup> <[+An Subject of], [-An] [+Direct Object of,]>>  
 'buy'

o o o o o o o o

o o o o o o o o

<sup>7</sup>The features [+Manner] and [+Purpose] indicate that these types of Verbs may be dominated by Adv. When they are, they undergo an obligatory transformation so that in surface structure they have the Modal Pres prefix agreeing with the NP Subject in Person, Number and Gender.



$\left\langle \underline{\text{yaaf}} \left\langle \left[ +\text{An} \right] \text{ Subject of} \right], \left[ -\text{An} \right] +\text{Direct Object of} \right], \left[ \text{S} \right] \right\rangle \rangle$   
 'know'

.....

.....

$\left\langle \underline{\text{bezza}} \left\langle \left[ +\text{An} \right] \text{ Subject of} \right], \left[ +\text{An} \right] +\text{Direct Object of} \right], \left[ +\text{Prep} \right], \right.$   
 'frighten'

$\left. \left[ +\text{Passive} \right] . . . \right\rangle \rangle$

$\left\langle \underline{\text{baat}} \left\langle \left[ +\text{An} \right] \text{ Subject of} \right], \left[ -\text{Abst} \right] -\text{Direct Object of} \right], \left[ +\text{Prep} \right], \right.$   
 'send'

$\left. \left[ +\text{Passive} \right] . . . \right\rangle \rangle$

.....

.....

$\left\langle \text{Prep}; \right.$

$\left[ +\text{N} \right.$

$\left\langle \underline{\text{fi}} \right.$   
 'in'

$\left[ \begin{array}{l} +\text{Def} \\ \left\{ \begin{array}{l} +\text{Place} \\ +\text{Time} \end{array} \right\} \end{array} \right] \right\rangle \rangle$

$\left\langle \underline{\text{bi}} \right.$   
 'with'

$\left[ +\text{Def}, +\text{Manner} \right] \right\rangle \rangle$

$\left\langle \underline{\text{lil}} \right.$

$\left[ +\text{An}, +\text{Spec} \right] \left[ +\text{Direct Object of} \right] \right\rangle \rangle$

$\left\langle \underline{\text{lil}} \right.$

$\left[ -\text{Direct Object of} \right] \right\rangle \rangle$

'to, toward, for . . . '

$\left\langle \underline{\text{minn}} \right.$

$\left[ +\text{Def} \right] \left[ +\text{Quantifier} \right] \right\rangle \rangle$

'from'





< minn            [+Passive] >>  
   'by'

< ta            [+Poss] >>  
   'of'

• • • • •

• • • • •

< Particle;            [+V    [+Modal Pres]] >>

< ?ed

< ser

< ha

• • • • •

• • • • •

< C;            [+Pred Phrase] >>

< kieku  
   'if'

< Subordinator;            [+S] >>

< li  
   'who, that, which, whom'

< Co-ordinator;            [+S], [+Pred Phrase], [+NP], [+PP], . . . >>

< u  
   'and'

• • • • •

• • • • •



3.3. Illustrations. The following section includes some of the subrules, that is, alternative expansions of the same constituent-structure rule, together with illustrative examples. Note that the constituent-structure rules do not make provision for conjoining which is accounted for by a metatheoretical principle in 5.2.3. Note further that each of the following subrules is given as the output of the constituent-ordering rules and is, therefore, linearly ordered, and that the examples are the output of the phonological component.

R 1	$\text{NP} \wedge \text{Pred-Phrase}$	<u>it</u> <u>tifel</u> <u>yilaab</u> 'the boy plays' (i)
	$\text{Q} \wedge \text{NP} \wedge \text{Pred-Phrase}$	<u>it</u> <u>tifel</u> <u>yilaab</u> ^ 'does the boy play?' (ii)
	$\text{C} \wedge \text{NP} \wedge \text{Pred-Phrase}$	<u>kieku</u> <u>t</u> <u>tifel</u> <u>yilaab</u> 'the boy would play' (iii)
	$\text{Q} \wedge \text{C} \wedge \text{NP} \wedge \text{Pred-Phrase}$	<u>kieku</u> <u>t</u> <u>tifel</u> <u>yilaab</u> ^ 'would the boy play?' (iv)
	$\text{Imp} \wedge \text{NP} \wedge \text{Pred-Phrase}$	<u>ilaab</u> 'play' (v)



R 2

VP

(int) tilaab

'(you) play' (i)

Aux<sup>^</sup> VP(int) kont tilaab

'(you) were playing' (ii)

Valuator [+Positive] VP

(int) deyyem tilaab

'(you) always play' (iii)

Valuator [-Positive] VP

(int) ma tilaab<sup>v</sup>

'(you) do not play' (iv)

Valuator<sup>^</sup> Aux<sup>^</sup> VP(int) deyyem kont tilaab

'(you) were always playing'(v)

R 3

Tns<sup>^</sup> kien(int) kont (tilaab)

'(you) were (playing)' (i)

Tns<sup>^</sup> kien Particle(int) kont ser (tilaab)

'(you) were going (to play)' (ii)

R 4

Tns<sup>^</sup> V(int) tilaab

'(you) play' (i)

Tns<sup>^</sup> V<sup>^</sup> NP(int) ti<sup>v</sup>stri ktieb

'(you) buy a book'

(int) tkun bahri

'(you) will be a sailor' (ii)





Tns <sup>^</sup> V <sup>^</sup> Adj

(int) tkun twiil

'(you) will be tall' (iii)

Tns <sup>^</sup> V <sup>^</sup> Adv

(int) tkun fis sodda

'(you) will be in bed' (iv)

Tns <sup>^</sup> V <sup>^</sup> Adv <sup>^</sup> V

(int) tohroj tiɣri tilaab

'(you) go running out to play' (v)

Tns <sup>^</sup> V <sup>^</sup> S

(int) triid tmuur

'(you) want to go' (vi)

Tns <sup>^</sup> V <sup>^</sup> NP <sup>^</sup> S

(int) taaf li anna ɣiet

'(you) know that Anna came' (vii).

R 5

Pres

(int ?ed) t(ilaab)

'(you) are (playing)' (i)

Modal <sup>^</sup> Pres

(int) t(ilaab aada)

'(you) will (play tomorrow)' (ii)

Past

(int laab) t

'(you play)ed' (iii)

R 6

V

(int hrieɣt) tiɣri

'(you went out) running' (i)



PP (int hriej<sup>y</sup>t) fil bitha  
'(you went out) in the yard' (ii)

V <sup>^</sup> PP (int hriej<sup>y</sup>t) tij<sup>y</sup>ri fil bitha  
'(you went out) running in the  
yard' (iii)

R 7  
N anna  
'Anna' (i)

Det <sup>^</sup> N it tifel  
'the boy' (ii)

N <sup>^</sup> Poss daar anna  
'Anna's house' (iii)

Det <sup>^</sup> N <sup>^</sup> Poss id daar ta anna  
'the house of Anna' (iv)

Det <sup>^</sup> N <sup>^</sup> S il fatt (li) d dinya tonda . . .  
'the fact (that) the world (v)  
is round . . . '

N <sup>^</sup> S (fakkartlil) anna (li) janni  
tela?  
'(I reminded) Anna (that) John  
had left.' (vi)



R 8

Art

il (marā)

'the (woman)' (i)

Dem <sup>^</sup>Artdiin il (marā)

'this (woman)' (ii)

Dem <sup>^</sup>Art <sup>^</sup>Quantifierdawn il hafna (tfaal)

'these many (children)' (iii)

Art <sup>^</sup>Quantifieril hafna (tfaal)

'the many (children)' (iv)

wh <sup>^</sup>Artmiin (Yie)<sup>8</sup>

'who (came)?' (v)

R 9 is illustrated by R 7 (iii) and (iv); R 10 is illustrated by R 6 (ii) and (iii).

---

<sup>8</sup>cf. 4.2.3.



## CHAPTER IV

### RULE JUSTIFICATION

4.0. Purpose. It is the aim of this chapter to justify the absence of linear ordering in the constituent-structure rules, the postulation of each node, and the way the lexicon is constructed.

Justification will be based on the following criteria:<sup>1</sup>

i) Utilization: In a transformational grammar the base is the central core; the transformational, the semantic, and the phonological components are peripheral to it in that they interpret the information supplied by the base. The base must therefore specify only those properties of the language which will be utilized by the other components. Thus, for instance, R 7 postulates the node Poss which, according to R 9, directly dominates NP. An optional injection transformational rule inserts the Preposition ta 'of' which in the lexicon is selectionally specified [+Poss].<sup>2</sup>

---

<sup>1</sup>The enumeration is a reference convenience: it does not entail a hierarchy of criteria.

<sup>2</sup>Note that within the present theoretical framework there are only two types of transformations: node-injection (i.e. insertion) and node-ejection (i.e. deletion). Permutation transformations, for example, are meaningless since grammatical functions are defined in terms of dominance relationships and not in terms of linear ordering.





(ii) Empirical evidence and the native speaker's competence: the decision as to whether a given utterance is grammatical is based on whether it conforms to the primary linguistic data and forms part of the native speaker's tacit knowledge of his language. The postulation, for instance, of it tifel tayyeb 'the boy is good' as S, and the postulation of it tifel it tayyeb 'the good boy' as an NP, is empirically and intuitively justified.

4.1. Linear Ordering. Each constituent-structure rule makes the claim that linear ordering is not a formal property of the base component of Maltese, and must therefore be excluded from the base.<sup>3</sup> The claim is based on the empirical observation that constituent-order is nonfunctional since either it plays no role at all in the grammatical description of S, or, if it does, it is predictable.

Consider the case of S. R1 asserts that the major constituents of S are NP and Pred-Phrase. If we

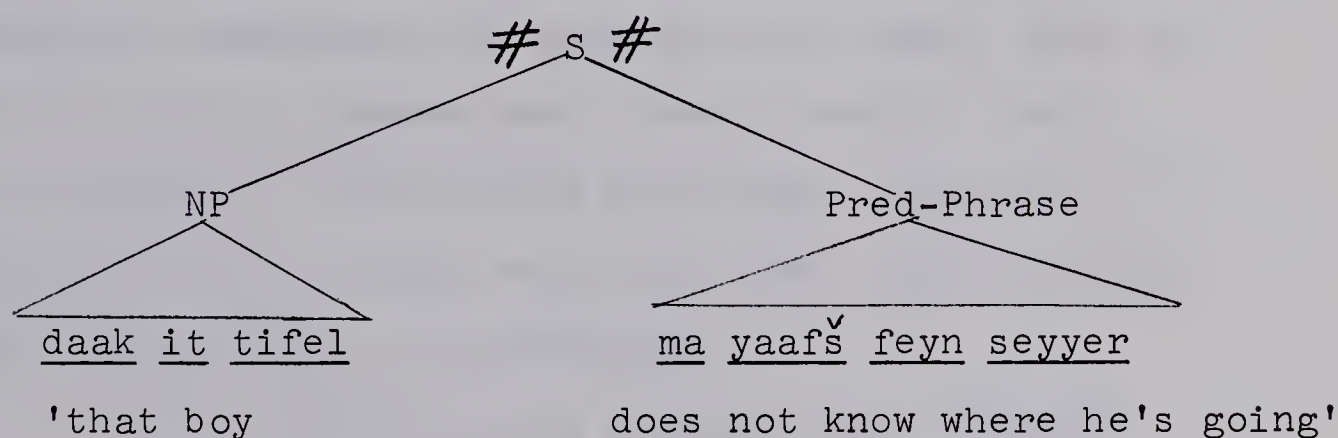
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<sup>3</sup>This notion rejects McCawley's 4th axiom, namely, " $\lambda$  is a partial ordering on the nodes (i.e. if  $x\lambda y$  and  $y\lambda z$ , then  $x\lambda z$ ; if  $x\lambda y$ , then it is false that  $y\lambda x$ )."

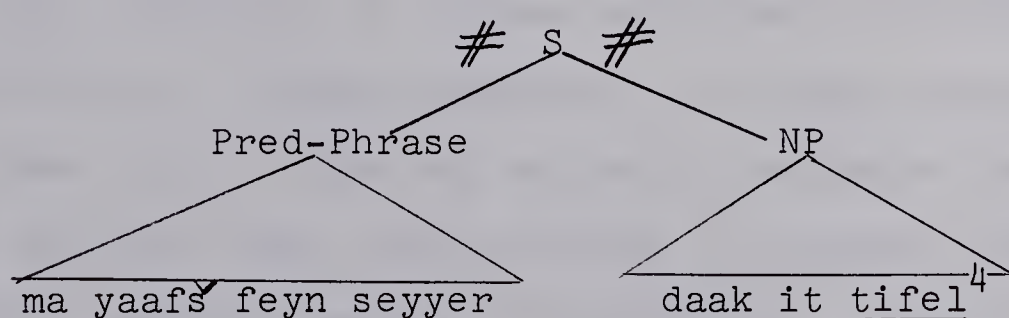
(McCawley, 1968:7)



say that the linear ordering must be NP to the left of Pred-Phrase, we have the rewrite rule:  $S \rightarrow NP \wedge Pred\text{-}Phrase$ . If, on the other hand, we permute the two elements so that Pred-Phrase precedes NP, we have the rewrite rule:  $S \rightarrow Pred\text{-}Phrase \wedge NP$ . On empirical evidence we know that, for Maltese at least,  $NP \wedge Pred\text{-}Phrase = Pred\text{-}Phrase \wedge NP$ , so that the simplified P-marker,



is functionally the same as,




---

<sup>4</sup>The triangles indicate unexpanded constituents. For a similar convention cf. Rosenbaum (1967: 105ff).



The imposition of a particular linear ordering on either  $\{NP, \text{Pred-Phrase}\}$  or  $\{\text{Pred-Phrase}, NP\}$  is therefore purely arbitrary.

Suppose, however, that  $A \wedge B \neq B \wedge A$  on the grounds that  $B \wedge A$  is ungrammatical. The Maltese Demonstrative, for instance, must always precede the Article so that  $\text{Art} \wedge \text{Dem}$  is ungrammatical. In such cases linearity is functional only to the extent that it distinguishes grammatical sentences from ungrammatical ones. That is, there is only one grammatical linear ordering for a given utterance. But even in such cases linearity is redundant: there is only one constituent order possible which, being unique, is predictable.

It is theoretically possible that  $A \wedge B \neq B \wedge A$  on the grounds that  $B \wedge A$  and  $A \wedge B$  are two grammatical sentences with different functional descriptions. In this case linearity is neither arbitrary nor predictable and should be a formal property of the base component. Yet there has not been any empirical evidence that this is in fact the case: every Maltese S examined proved to be either nonfunctionally or predictably ordered.<sup>5</sup>

---

<sup>5</sup>Luelsdorff makes a similar claim for English and Russian. (Personal communication between Luelsdorff and Šaumjan).





Non-concatenative constituent-structure rules of the type presented in Chapter III specify only dominance relationships. The syntactic function of a category is defined in terms of its relation to the node that immediately dominates it. Thus an NP functions as the Subject-of S not because it precedes a Pred-Phrase but because it is dominated directly by S. This is tantamount to saying that a given S can have only one NP Subject or that a given VP can have only one NP Object.

4.2. The Constituent-structure Nodes. Each rule asserts that a node is admitted in an evolving P-marker if it bears the label to the left of the semicolon and directly dominates the node(s) to the right of the semicolon.

R 1 specifies both the obligatory and the optional elements directly dominated by S which, being the root-node, and the grammar a discourse-generating device, is assumed as given.

The Pred-Phrase directly dominates Aux and VP. The Maltese Aux, unlike the English Aux, is optional. Both the Aux and the VP take Tense (Tns); but the Aux and the VP do not necessarily share the same Tns. Consider

---

<sup>6</sup>Koutsoudas refers to 'doubled subject' and 'doubled object' which, according to the notion of function given above and in Chomsky (1965: 70-74), are theoretically untenable notions (Koutsoudas, 1967: 33-48).



the following sentences:

anna tkun tilaab

'Anna will be playing'

in which the Tense of both Aux and the Verb is Modal and Pres;

anna kienet tilaab

'Anna was playing'

in which the Tense of Aux is Past and that of the Verb is Modal and Pres;

anna tkun laabet

'Anna will have played'

in which the Tense of Aux is Modal and Pres, and that of the Verb is Past;

anna kienet laabet

'Anna had played'

in which the Tense of both Aux and the Verb is Past. It is for this reason that Aux is postulated as an optional element dominated by Pred-Phrase.

4.2.0. The Linking Verb. Although in the primary linguistic data a distinction was made between the linking Verb kien and all the other Verbs, the grammar does not provide for a linking-verb node. In other words, we make the claim that kien as linking Verb is not categorically different



from any other Verb, and is introduced into the grammar by the same rule that introduces other Verbs. This claim is based on the following considerations.<sup>7</sup>

A grammatical function is defined in terms of dominance relationship. Thus an NP is Object-of if it is dominated by the VP which must also dominate a V. In the following sentence,

ir raŷel ?ara ktieb

'the man read a book'

the VP dominates the NP ktieb which is then the Direct Object-of the VP. The VP also dominates the Verb ?ara. Now in the following sentence,

ir raŷel kien seftuur

'the man was a servant'

the VP dominates the NP seftuur which is then the Direct Object-of the VP. The VP also dominates kien which must also be a Verb. No unique node for kien as a linking Verb is thus required in the grammar.

In surface structure, kien is deleted when Tns is Pres:

---

<sup>7</sup>Luelsdorff makes a similar claim for the English copula be. (Luelsdorff: March, 1968).





it tifel kien awn

'the boy was here'

it tifel ikun awn

'the boy will be here'

it tifel awn

'the boy is here'

Unlike any other Verb, kien cannot occur in the environment of a Manner Adverbial, but it can in that of an Adjective:

\*it tifel bil mod

\*'the boy is slowly'

it tifel twiil

'the boy is tall'

Kien is selectionally restricted to a Definite NP Subject but a nonDefinite Predicate<sup>8</sup>:

it tifel twiil

'the boy is tall'

it tifel seftuur

'the boy is a servant'

---

<sup>8</sup> If both NP's are either Definite or nonDefinite, the construction is a modified NP:

it tifel it twiil  
'the tall boy'

it tifel is seftuur  
'the boy servant'





4.2.1. Tense. The verbal affix denotes not only Tns but also the Person and, in the third Person Singular, the Gender of the NP Subject. The Person and Gender (as also the number affix) are determined by the inherent syntactic features of the Noun in the NP Subject. Once agreement is established the NP Subject may be deleted:

it tifla tilaab → tilaab  
 'the girl plays'    \*'plays'

R 5 asserts that Tns dominates either Pres or Past, and that the occurrence of the Modal depends on that of Pres. In surface structure, Pres has no phonetic realization. Thus a Verb like tilaab which is made up of the Modal Pres and the verb-base conveys the notion of habituality or very near future:

tilaab kulyuum  
 'she plays everyday'  
tilaab aada  
 'she will play tomorrow'

Remote future is expressed by adding the invariable verbal particle aad to the Modal Pres:

aad tilaab  
 'she will play (some day)'



Actuality is expressed by adding the invariable verbal particle ?ed to the Modal Pres:

?ed tilaab

'she is engaged in the act of playing'

That in fact the prefix is a modalized Pres and not a plain Pres can be justified on the following grounds. Consider first the case of kieku. This is an invariable verbal particle which appears in conditional sentences. Aquilina<sup>9</sup> analyzes it as a combination of kien and ikun:

yilaab

'he will play' or 'he plays'

ikun yilaab

'he will be playing'

kien ikun yilaab

'he will have been playing'

kieku yilaab

'he would play'

kieku ikun yilaab

'he would be playing'

kieku kien ikun yilaab

'he would have been playing'

---

<sup>9</sup>(Aquilina), 1965: 223.



kieku ikun laab

'he would have played'

kieku kien laab

'he would (already) have played'

This notion of conditioned modality is possible if we analyze kieku as an instance of Past combined with a modalized Pres rather than with a plain Pres.

Moreover, there are constructions in Maltese which are made up of three or more Verbs of which the first may take any verbal affix but the second and subsequent Verbs must take the prefix. The second and third Verbs have the force of Adverbials, one denoting Manner, the other Purpose. Thus, according to R 4 and R 6 we can have

Tns, V, V, V, NP

as in

har<sup>Y</sup>jet      ti<sup>Y</sup>ri      ti<sup>Y</sup>stri      ktieb

'she went out she will run she will buy a book (=she went running out to buy a book)'.  
'

The co-occurrence restrictions of these Verbs are specified in the lexicon.

2.2.2. The Noun Phrase. According to R 7, NP dominates the obligatory lexical category N, that is, a Proper Name or a Personal Pronoun (both of which are specified in the lexicon),

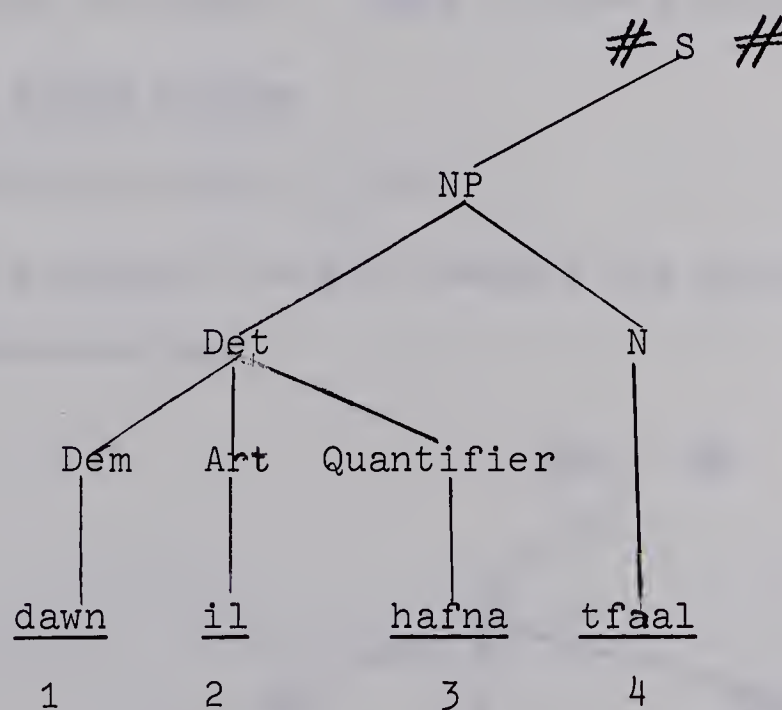




or one of the following: Det and a Common Noun, a Common Noun and Poss; Det, Common Noun and Poss; a Common Noun and S; Det, Common Noun and S.

According to R 8 Det dominates the Article which may be accompanied by either the Demonstrative or the Quantifier or both. The Article may also be accompanied by the Wh-formative (see 4.2.3.). R 9 states that Poss (the possessive) dominates NP, and R 10 expands PP (prepositional phrase) as Prep and NP.

R 7 and R 8 account for, inter alia, the (partial) expansion of the NP in the following way:



'these many children'

The lexicon specifies the agreement restrictions on the Dem and the Quantifier in the environment of a plural Noun. If



a constituent-ordering rule specifies the linear ordering as being Quantifier preceding Dem, a transformational rule will obligatorily inject the Preposition minn:

SC: 1, 2, 3  $\longrightarrow$  3 minn, 1, 2

If Quantifier <sup>^</sup>minn follows N, another transformational rule injects a Personal Pronoun which agrees with the plural Noun in Number:

SC: 3 minn, 1, 2, 4  $\longrightarrow$  1, 2, 4, 3 minn om

Thus,

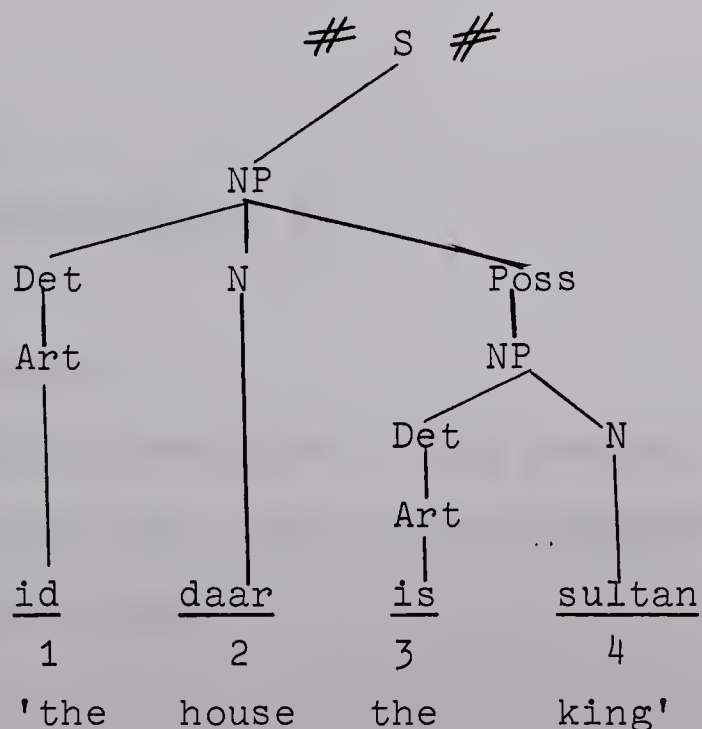
dawn il hafna tfaal  $\longrightarrow$  hafna minn dawn it tfaal  $\longrightarrow$

'these many children' 'many of these children'

it tfaal hafna minnom

'the children, many of them'

R 9 accounts for the nominal and pronominal genitival constructions:



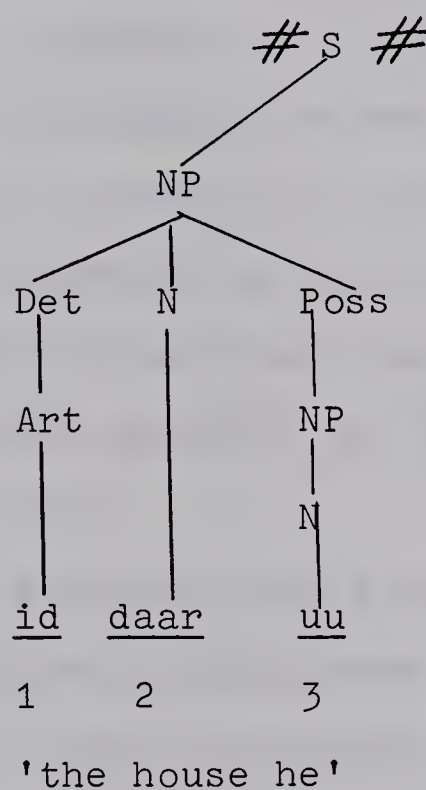


SC: 1 (i.e. the whole of the first Det)  $\longrightarrow \emptyset$

daar is sultan

'the king's house',

If the Noun dominated by Poss is specified [+Pron] the genitival construction is pronominal:



SC: 1  $\longrightarrow \emptyset$

daar uu

a phonological rule realizes uu as u,

daaru

'his house'

If in the surface structure of the nominal genitival construction Poss precedes Det, then the Noun dominated by the NP is itself genitivized:<sup>10</sup>



daar is sultan —> is sultan daar

'the king's house' 'the king his house'

We can therefore formulate the following general principle:

If NP <sup>^</sup>X, then NP <sup>^</sup>X <sup>^</sup>Pronoun

where X is either Quantifier <sup>^</sup>minn or a Noun.<sup>11</sup>

4.2.3. Questions. A grammar has to account for the fact that the hearer can distinguish between a statement and a question<sup>12</sup>. The basis on which the hearer makes the distinction is the occurrence of a special word or intonation. R 1 asserts that what signals to the hearer that a question is being asked is the Q-formative in the underlying P-marker of S.

In surface structure the Q-formative takes the phonetic shape of either a wh-morpheme or a breath-group that concludes with a rising intonation. Here we shall

---

<sup>10</sup> An analytical construction can be formed if instead of an ejection transformation, an injection transformation is applied to insert ta: id daar is sultan —> id daar ta s sultan, 'the house of the king'; id daar ta uu (a phonological rule realizes ta uu as tiyew) 'the house of his'.

<sup>11</sup> For the expansion of R 10, cf. 5.2.3.(c).

<sup>12</sup> Lieberman (1967: 133).







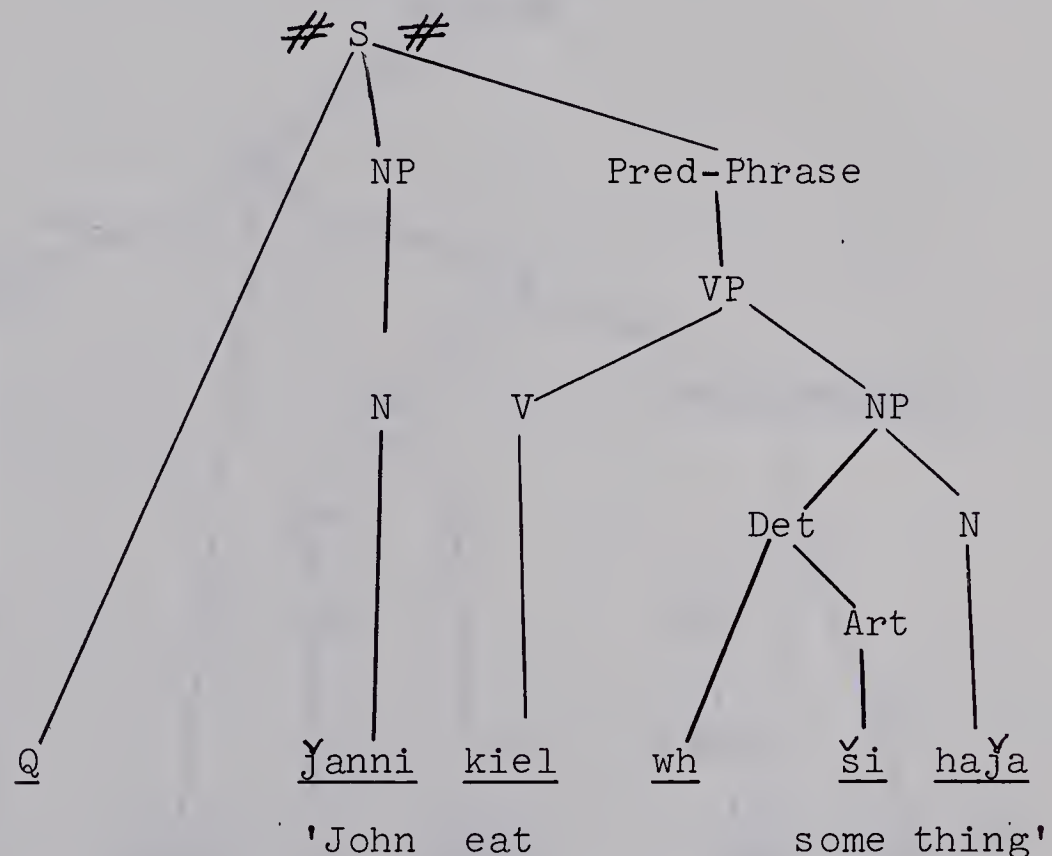


combination Q wh ši hadd in surface structure has the phonetic shape miin, and the derived question is,

miin maar

'who went away?'

When the NP Object is questioned, the underlying P-marker is,



In the lexicon haja is specified [-Spec] and [-An], and the combination Q wh ši haja has in surface structure the phonetic shape š. After the application of a constituent-ordering rule, we derive

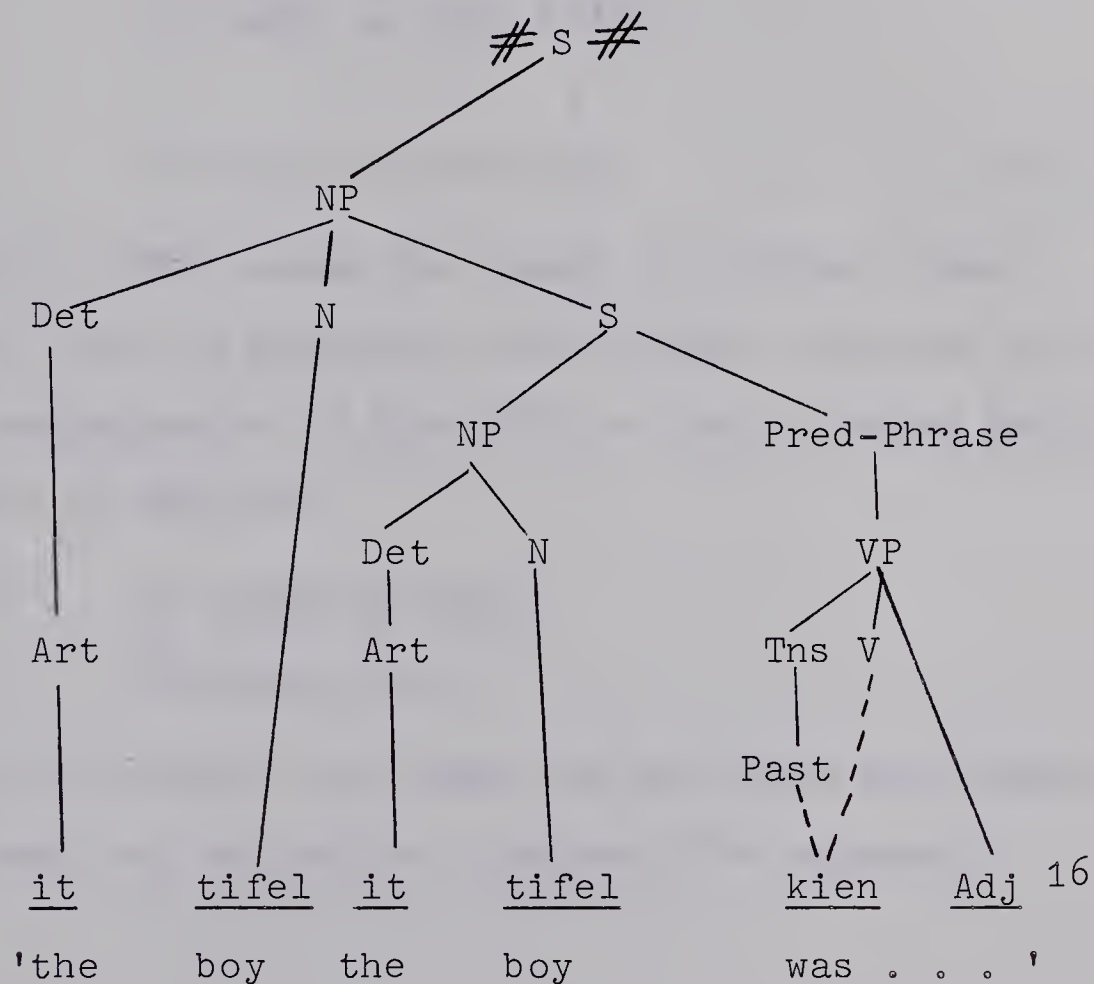
Janni š kiel

'what did John eat?'



4.2.4. Complex Sentences. The initial symbol S is recursive under VP in R 4 and under NP in R 7. Recursive S accounts for relativization and NP- and VP-complementation.<sup>15</sup>

Relativization refers to derivations generated through the application of R 1, R 2, R 4, R 5, R 7, and R 8:



<sup>15</sup>Cf. Rosenbaum (1967: 103-118).

<sup>16</sup>The broken lines mean 'will eventually become'. For a similar convention cf. Laurin (1967: 7).





After the application of the Noun-Adjective agreement rule, we obtain,

<u>it</u>	<u>tifel</u>	<u>it</u>	<u>tifel</u>	<u>kien</u>	<u>twiil</u>	. . .	(i)
1	2	3	4	5	6		

If 1 and 2 = 3 and 4, then 3 and 4 are ejected, and li injected:

<u>it</u>	<u>tifel</u>	<u>li</u>	<u>kien</u>	<u>twiil</u>	. . .	
1	2	3	4	5		

'the boy who was tall . . . ' (ii)

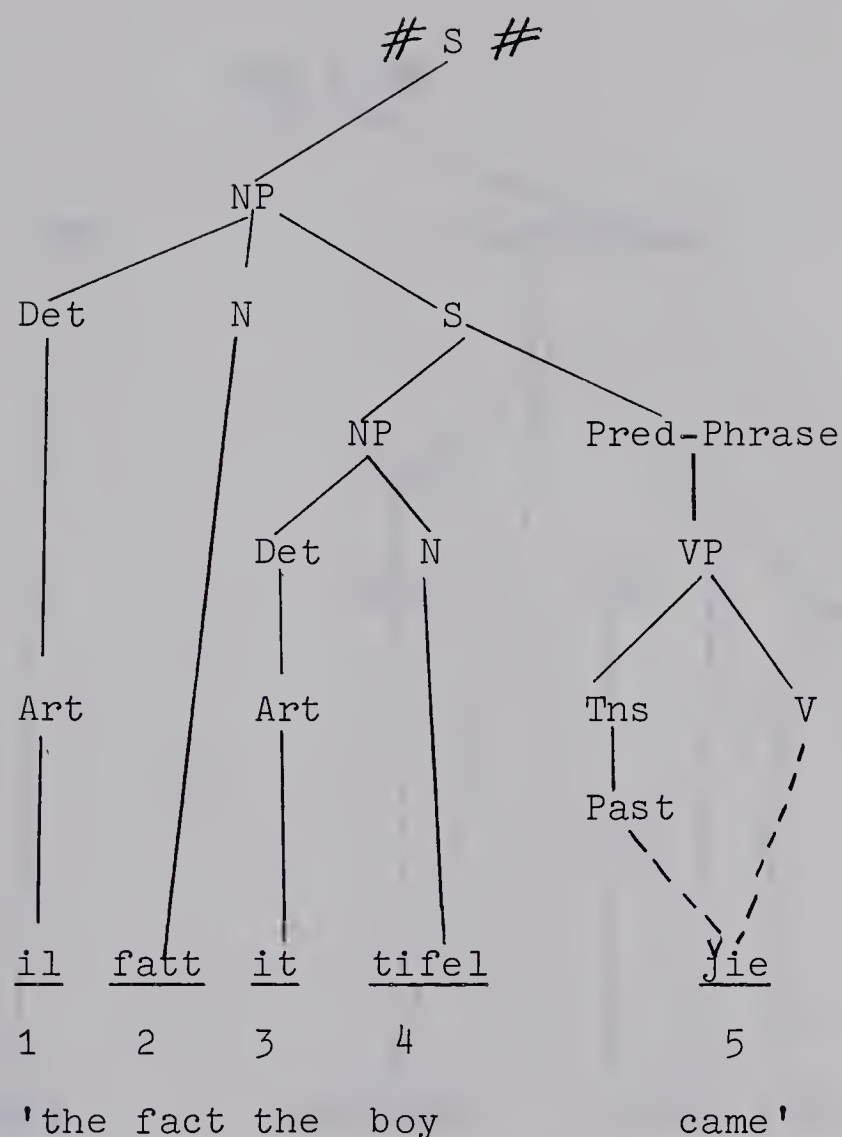
Optionally (ii) may become the input to another transformational rule: li kien → l, the definite Article, so that after the assimilation of the Article the following modified construction is derived:

<u>it</u>	<u>tifel</u>	<u>it</u>	<u>twiil</u>

'the tall boy'

Ejection in (i) occurs only when the two Nouns are identical. When they are not, we derive a Subject NP-complement:





Since  $2 \neq 4$ , a transformational rule injects li between 2 and 3, and the following Subject NP-complement is derived:

il fatt li t tifel jie . . .

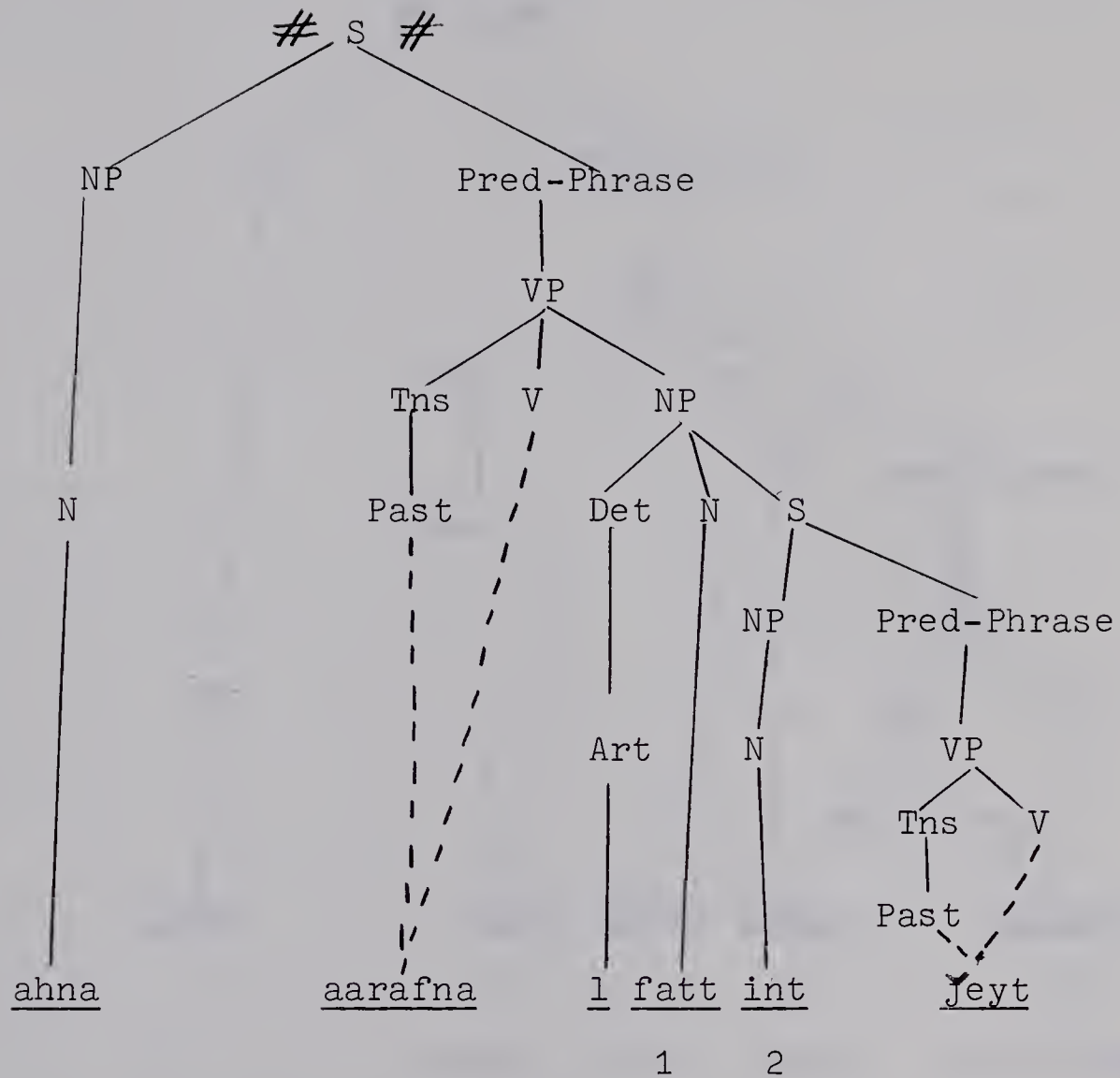
'the fact that the boy came . . .'

An Object NP-complement is derived through the application of R 4 and R 7, reproduced for convenience as R 4' and R 7':

R 4'     $\langle \text{VP}; \text{Tns}, \text{V}, \text{NP} \rangle$

R 7'     $\langle \text{NP}; \text{Det}, \text{N}, \text{S} \rangle$





'we acknowledged the fact you came'

An obligatory transformational rule injects li between 1 and 2, and the following sentence is derived:

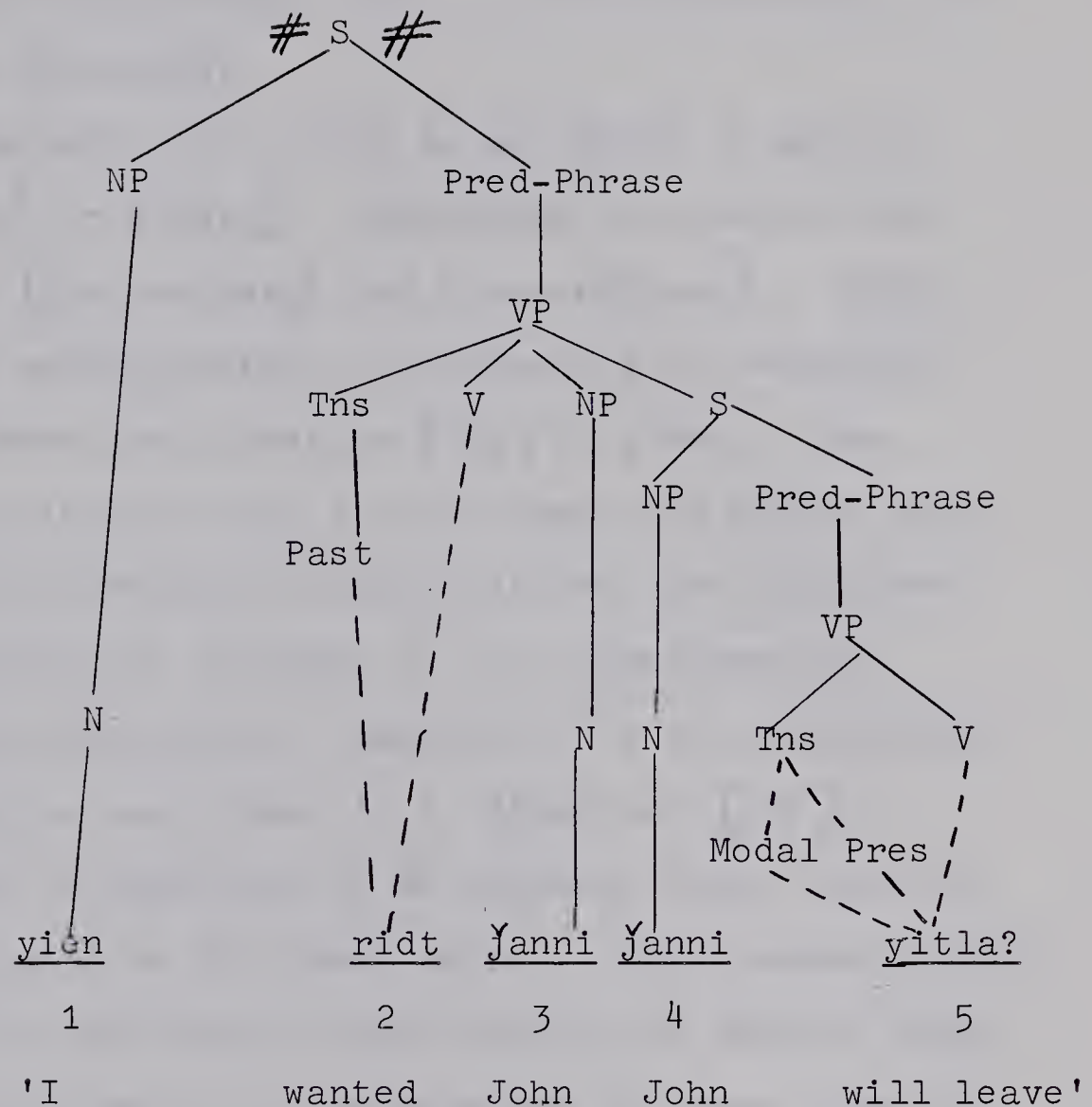
ahna aarafna l fatt li int jeyt

'we acknowledged the fact that you came'

Through the application of  $R^4$ , reproduced as  $R^4'$ , we derive a transitive VP-complement:

$$R_4''' \langle VP; Tns, V, NP, S \rangle$$





A transformational rule ejects 4 and injects the Preposition lil between 2 and 3:

yien ridt lil ḡanni yitla?

'I wanted John to leave'

4.3. The Lexicon. Lexical items are minimally represented, that is, all redundancies are omitted. Thus, for example, if a lexical item is either a Pronoun, a Proper Name, or [+Specific], it must also be [+Definite]; if it is [+Human],





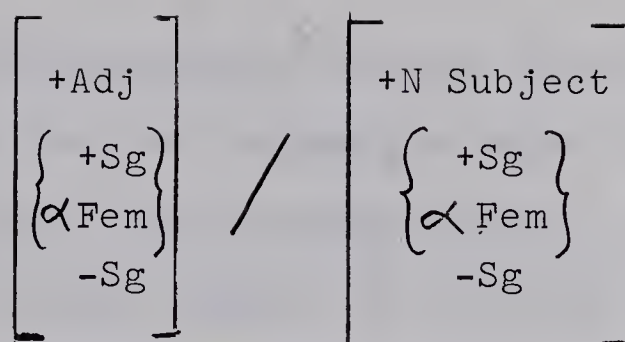
it must also be [+Animate]; and if it is [+Abstract], it must also be [-Animate].

Similarly, if a Noun is not [+Sg] it must be either [+Dual] or [-Dual]. Nonduality is further categorized into [+Determinate] and [-Determinate]. When, however, the categorization of nonduality is redundant, only the feature specification [+Sg] is given. Thus, for instance, in the case of most Common and Proper Nouns, of all Personal Pronouns, Demonstratives, and Adjectives, the only information relevant to the transformation, semantic, and phonological components, is the distinction between singular and plural (i.e. [+Sg] and [-Sg]).

The VP dominates an NP Indirect Object only if it also dominates an NP Direct Object. This generalization is captured in the feature specification of certain Verbs which are selectionally subcategorized [-Direct Object]: this selectional feature implies the selectional feature [+Direct Object].

Since the lexicon is only an illustrative sample, the co-occurrence restrictions of the Adjectives are fully specified. In a full grammar of Maltese, however, these restrictions should be generalized in an agreement rule applicable to all Adjectives:





which states that an Adjective agrees with the singular Noun Subject in Gender and with the plural Noun Subject in Number.<sup>17</sup>

The feature [+Passive] specifies certain Verbs in the lexicon. According to Maltese Grammarians<sup>18</sup>, in Maltese there is no Passive Voice properly so called. Consider the following sentences:

it tifla haslet wičča  
'the girl washed her face'

The Verb haslet is the source of the Verb in the following sentence,

it tifla nhaslet  
'the girl washed herself' (i)

If the Verb is followed by a Prepositional Phrase as in

it tifla nhaslet minn omma

the gloss is,

'the girl was washed by her mother' (ii)

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<sup>17</sup>Note that this is a non base notational convention.

<sup>18</sup>Cf., for instance, Aquilina (1965: 134), and Sutcliffe (1936: 71).



The idiosyncratic feature [+Passive] specified in the lexicon does not therefore refer only to the true passive but to all the interpretations a particular Prepositional Phrase imposes on the derived Verb.

The English sentence (ii) is also a translation of,

it tifla kienet mahsula minn omma

in which mahsula is the adjectivalization of the Verb hasel, and S made up of NP, V, Adjective, and PP.

Thus, it seems that the process of 'passivization' is not a formal property of the Maltese base component but a part of Maltese phonology. The function of the base is to indicate which Verbs undergo the morphological process of derivation, and this information is supplied by the lexicon.





## CHAPTER V

### LEVELS OF ADEQUACY AND LINGUISTIC UNIVERSALS

5.0. Purpose. A grammar of a language is adequate if it accounts for the primary linguistic data, makes significant generalizations which express the underlying regularities of the language, and is based on a general theory of language which chooses that grammar as the most adequate on the descriptive level. The main intention throughout this study has been to present a grammar which, given the other components, projects beyond the data into an account of the underlying competence<sup>1</sup> of the native speaker. The purpose of this chapter is to evaluate the fragment of grammar presented in this study for levels of adequacy.

5.1. Levels of Adequacy. The most elementary requirement that we impose on a grammar is that it account for a given corpus of linguistic facts. If the requirement is met, we say that the grammar is observationally adequate.

In Chapter<sup>IV</sup><sub>A</sub> we showed, inter alia, how the grammar accounts for the primary linguistic data presented in Chapter II. The grammar, it has been shown, generates only grammatical sentences and none of the ungrammatical

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<sup>1</sup>For a discussion of the notion 'competence', cf. Chomsky (1965: 4).



ones.<sup>2</sup>

A grammar that is only observationally adequate is, however, severely limited: it accounts for only a portion of the language and says nothing about the dynamics of language, that is, about the power that gives a language its generating capacity. We therefore require that a grammar should go beyond the primary data to a specification of the creative faculty of language, and thus account for the competence of the native speaker who is capable of generating an infinite number of entirely novel sentences. If the grammar satisfies this requirement, we say that it is descriptively adequate.

We claim that the grammar presented in this study does, in fact, account for the native speaker's competence, and it is therefore descriptively adequate. This claim is based on the following considerations. The set of rules of the grammar of any language must be finite;

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<sup>2</sup>Using Postal's lexical substitution rule, Lakoff revised the base in such a way as to make the grammar generate not only grammatical sentences but also ungrammatical ones, and mark them as such. In this way Lakoff claims he can account for degrees of grammaticality. (Lakoff, 1966: Appendix B).



otherwise, it would be impossible for anyone to acquire a language. But although the rules are finite, we require that the rules be powerful enough to generate or enumerate all the possible sentences of a language. Furthermore, the rules must assign a structural description to each sentence they generate.

To satisfy all these requirements the rules must be generalizations about the language. These are the generalizations that enable a native speaker to generate novel sentences and to evaluate the well-formedness of each sentence. We submit that the rules we have formulated are generalizations about the nature of Maltese similar in kind to the generalizations a native speaker unconsciously makes about his language.

It is apparent that if a grammar is descriptively adequate on the grounds that it makes the most linguistically significant generalizations, it must also be, to a lesser or greater extent, explanatorily adequate. To assess explanatory adequacy, Chomsky<sup>3</sup> suggests an evaluation measure that determines which generalizations about a language are significant ones. A significant generalization is one that makes predictions about certain aspects of a

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<sup>3</sup>Chomsky (1965: 37-47).





given language, the prediction, for instance, that, whenever in the surface structure of a Maltese Sentence the NP Object precedes the Verb, a Pronoun agreeing with the Object in Person, Number, and Gender, must be suffixed to the Verb. Such a principle expresses an underlying regularity of the Maltese language, and accordingly simplifies the grammar by shortening it.

A more highly valued generalization is one which concerns the properties of human language, those properties, that is, which being common to all natural languages, are removed from the description of individual languages. These common properties are the universals of language.<sup>4</sup>

5.2. Universals. An examination of the surface structures of various languages reveals many apparent common properties, such as, for instance, the fact that 'languages with dominant order V(erb) O(bject) S(ubject) have the adjective after the noun'.<sup>5</sup> A deeper look into the nature of language will reveal more significant generalizations.

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<sup>4</sup>'A full specification of the latter set of features [i.e. those features that a language has by virtue of being a natural language as opposed to those features that a language has by virtue of being Maltese, English, Italian, etc.] is a theory of the structure of natural language, and the features specified are the universals of language.' (Katz and Postal: 1964, 160).

<sup>5</sup>Greenberg (1963: 88. Universal 17).





5.2.0. Nonlinearity. Throughout this study we have emphasized the point that linear order is a redundant feature of the base component of Maltese. It may well be the case that the redundancy of linear order in deep structure is a universal phenomenon.

This hypothesis can be easily refuted if, as Luelsdorff<sup>6</sup> points out, in any given language a sentence is shown to change its grammatical description when its constituents are permuted. In the absence of empirical evidence to this effect, we may assume that linear order in the base component of any language is redundant; that its imposition on constituent-structure rules is an unnecessary constraint; and that its elimination simplifies the structure of the base component.

The absence of linear order will moreover make the base completely non-interpretive. In a concatenative system each rewrite rule has the dual function of postulating a grammatical relationship and of assigning constituent order. This makes the base partly interpretive of the information it is supposed to supply to the semantic and the phonological components for interpretation.

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<sup>6</sup>(personal communication between Luelsdorff and Saumjan).



5.2.1. Lexical Dominance. We also make the assumption that in the grammar of any language there must be a node which is lexically dominant.<sup>7</sup> If this is so, then the lexical insertion rule must be subdivided into a set of partially ordered subrules; or, apparently equivalently, the lexicon must consist of an ordered set of lexical entries. That is, the insertion of the lexically dominant category into the preterminal string of an evolving P-marker must precede that of the lexically nondominant categories.

A lexical entry, other than that of the lexically dominant category, specifies the environment in which a lexical item can occur. Each lexical entry can therefore be considered as a node admissibility condition.<sup>8</sup>

5.2.2. Selectional Features. Furthermore, it is apparent that in the case of those lexical categories which are analyzed into selectional and strict subcategorization features, the selectional feature is always dominant. A strict subcategorization feature refers to the frame of category symbols in which a lexical category appears; for instance, a Verb has the feature [+Transitive]

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<sup>7</sup>Cf. footnote 20 on I-14.

<sup>8</sup>For the notion 'node admissibility condition', cf. McCawley (1968: 4ff).



if that Verb and the NP are both directly dominated by the VP. A selectional feature, on the other hand, refers to all the co-occurrence restrictions of a given lexical category. If we then analyze a Verb as, for instance, one that takes an Animate Subject and a nonAnimate Object, we are also strictly subcategorizing that Verb in terms of the frame of the category symbols in which it appears. We therefore claim that strict-subcategorization features are predictable and should not form part of the base component of any language.

5.2.3. 'Loopfulness! McCawley's third axiom<sup>9</sup>, namely, that a tree contains no 'loops', puts an unnecessary constraint on grammar. If we accept this constraint, we will have to treat conjoining by double-base or generalized transformations which operate simultaneously on n P-markers where n is equal to, or greater than, 2. This is in fact how conjoining has been treated in the literature. We maintain that such a treatment is unnecessary if we consider 'loopfulness' to be a property of the general theory of language.

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<sup>9</sup>McCawley's motivation for postulating such an axiom is not clear since he himself maintains that a rule of the form  $NP \rightarrow \text{and } (NP^n)$  must appear in the deep structure of English (McCawley, 1968: 7). It should be noted that it is precisely because of the necessity of such rules in the base that McCawley removes Chomsky's constraint that a category symbol cannot directly dominate itself.







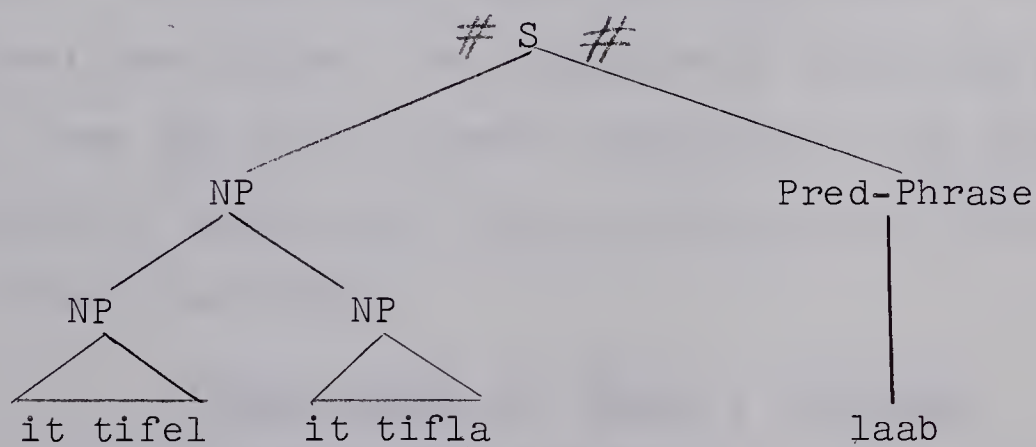
On empirical evidence we state that conjoining can occur with respect to either S or other major category symbols. We therefore stipulate that only a major category can directly dominate a number of category symbols identical to itself; and we define a grammatical formative as that object which cannot dominate a category symbol identical to itself.

Since conjoining is a property of human language, we introduce the following principle in the general theory of language,

Any major grammatical category symbol  
may directly dominate an infinite number  
of category symbols identical to itself.

The principle will account for, inter alia,

a) Subject NP conjoining:



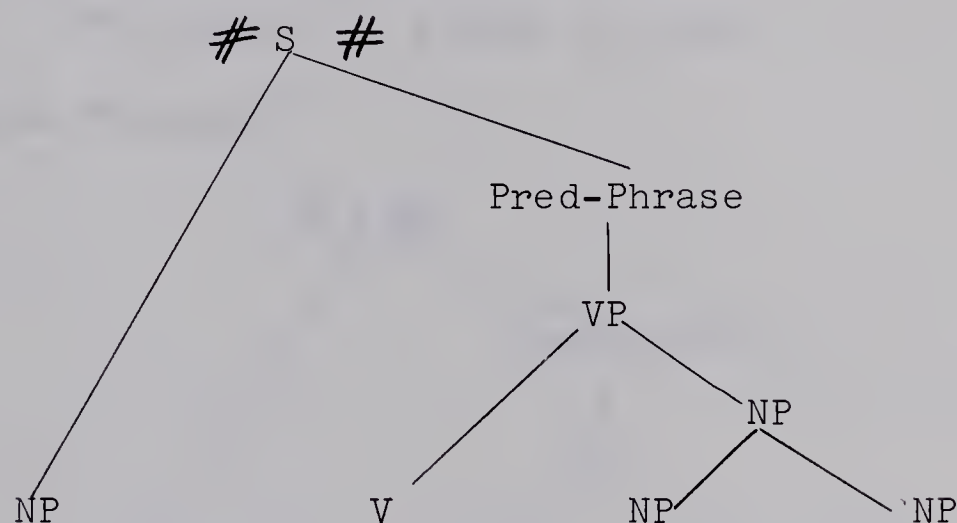
where, after the application of an obligatory conjunction injection transformation and the Subject-Verb agreement transformation, we derive



it tifel u t tifla yilaabu

'the boy and the girl play'

b) Object NP conjoining



Whether the Object NP's are both Direct or one Direct and the other Indirect depends on the feature specification of the Verb. If we select a Verb specified in the lexicon as [+Direct Object], then both the Object NP'S are Direct. In this case, after the application of two transformational rules, one obligatorily injecting u 'and', and the other lil as an element dominated by the same node that dominates a Noun with the specifications [+Direct Object], [+An , +Spec], we derive

yien inhobb lil Janni u lil anna

'I love John and Anna'

If the Verb we select is specified [-Direct Object], then one of the Object NP'S is Indirect and the other is

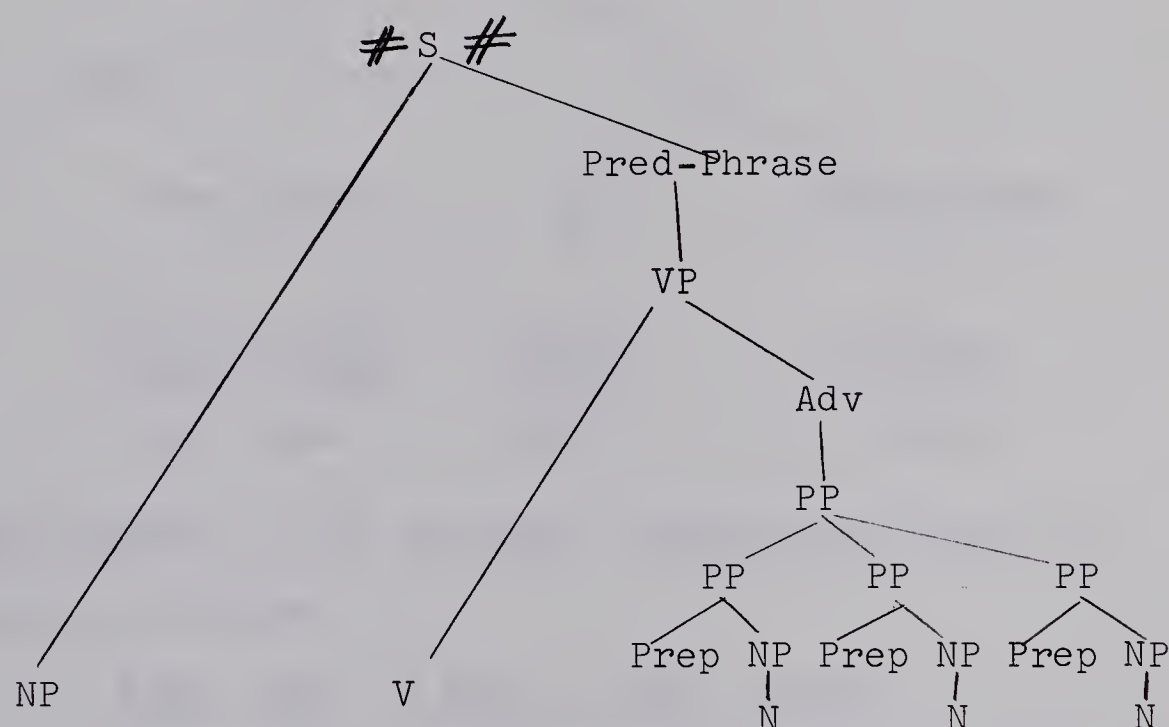


predictably Direct. An injection transformational rule will obligatorily insert lil as an element dominated by the same node that dominates the Indirect Object:

it tifel baat fyuura lil anna

'the boy sent a flower to Anna'

c) Prepositional Phrases<sup>10</sup>



The choice of the Preposition is determined by the feature-specification of the Noun; if one Noun is specified [+Manner], the other [+Place], and the other [+Time], we derive the following Prepositional Phrases:

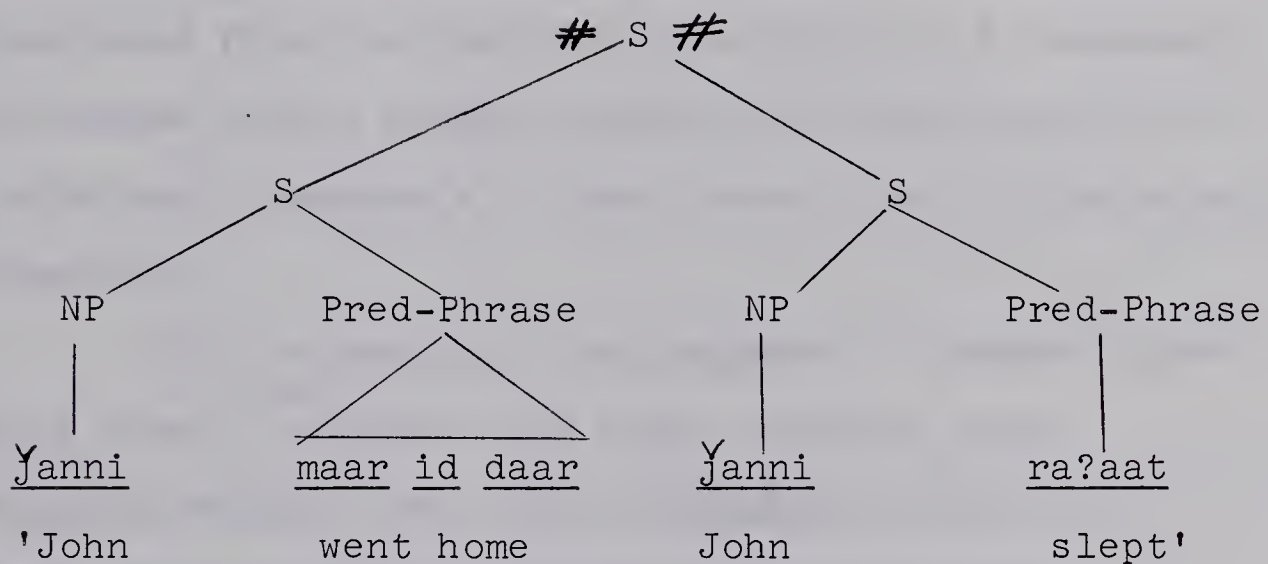
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<sup>10</sup>PP is expanded by R 10.



it tifla tilaab bil mod fil bitha fil oodu  
 'the girl plays quietly in the yard in the  
morning'

d) Discourses



After the application of an optional conjunction injection transformation, we derive

Yanni maar id daar u Yanni ra?aat  
 'John went home and John slept'

The injection transformation may be optionally followed by pronominalization:

Yanni maar id daar u uu ra?aat  
 'John went home and he slept'

If the Noun Subject and the Pronoun Subject are identical, the Pronoun Subject is optionally deleted:

Yanni maar id daar u ra?aat  
 'John went home and slept'





5.2.4. Conclusion. If universal features such as those outlined above are made part of the general theory of language, the grammars of individual languages will be considerably simplified: features common to all languages (and hence redundant in individual languages) are excluded from the specific descriptions of languages and included in the general theory. The description of an individual language will then contain only idiosyncratic information.

It is hoped that the fragment of grammar given in this thesis concerns only those features which distinguish Maltese from other languages; that this fragment is both observationally and descriptively adequate; and that the general theory on which it is based is explanatorily adequate.



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